COAL

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HEARINGS

BEFORE THE

SPECIAL SUBCOMMITTEE ON COAL RESEARCH

OF THE

COMMITTEE ON INTERIOR AND INSULAR AFFAIRS HOUSE OF REPRESENTATIVES

EIGHTY-FIFTH CONGRESS

FIRST SESSION

ON

THE ESTABLISHMENT OF A RESEARCH AND DEVELOPMENT PROGRAM FOR THE COAL INDUSTRY

FEBRUARY 13, 1957, AT EBENSBURG, PA.
FEBRUARY 15, 1957, AT ABINGDON, VA.
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RESEARCH AND DEVELOPMENT PROGRAM FOR THE COAL INDUSTRY

WEDNESDAY, FEBRUARY 13, 1957

HOUSE OF REPRESENTATIVES,
SPECIAL SUBCOMMITTEE ON COAL RESEARCH,
OF THE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS,
Ebensburg, Pa.

The special subcommittee met, pursuant to notice, at 10 a. m., in courtroom No. 3, Cambria County Courthouse, Hon. Ed Edmondson, chairman of the special subcommittee, presiding.

Mr. EDMONDSON. The Subcommittee on Coal Research will come to order.

I would like to say at the outset of the hearing that it is a pleasure and a privilege to be in the district of our good friend and colleague, John Saylor.

Most members of the coal industry I am sure are aware of the fact it was Congressman Saylor in the 84th Congress who introduced House Resolution 400 which was passed by the House, establishing a Subcommittee on Coal Research to conduct hearings into the problems of the coal industry.

(COMMITTEE NOTE: For information, H. Res. 400, 84th Cong., is set forth below:)

[H. Res. 400, 84th Cong., 2d sess.]

RESOLUTION

Resolved, that the Committee on Interior and Insular Affairs, acting as a whole or by subcommittee, is authorized to conduct a full and complete study on the possibilities of a research and development program for the coal industry of the United States. In particular, the committee or subcommittee shall seek to determine—

(1) whether or not there is a possibility of developing under existing law, a cooperative research venture in which the Federal Government, interested and affected State governments, as well as industry, labor organizations and private corporations might participate; and ascertain what part the agencies might play in a research and development program and in what fields Federal or State governments might best cooperate;

(2) whether or not there is a possibility that an effective research program for coal might be developed in the same magnitude, and on the same general organizational basis, as those which have been and are now currently conducted by the Atomic Energy Commission, the National Advisory Committee for Aeronautics, the National Science Foundation, and similar groups;

(3) and investigate fields of research into which such a program might delve in order to accomplish the best and most expeditious results for an economic revival of the coal industry. Such fields of research should cover the general categories of coal production, coal transportation, coal distribution (market studies, and so forth), coal utilization in conventional forms, development of new and expanded uses of coal, including gasification, chemical production and a general appraisal of all coal technology;

(4) what progress has heretofore been made in the production of a synthetic liquid fuel in the overall energy program and what advances in our present knowledge and skills with respect to the production of synthetic liquid fuel may be reasonably anticipated in the future; and

(5) whether the public interest would be served by the construction of a plant for the conversion of coal into a synthetic fuel to permit more rapid development of techniques for the production of synthetic liquid fuels, since it is inevitable that the exhaustion or conservation of other fuels will require synthesis fuels to assume major importance in supplying the energy requirements of the Nation in time of war and peace.

The committee shall report to the House (or to the Clerk of the House if the House is not in session) as soon as practicable during the present Congress the results of its study, together with such recommendations as it deems advisable.

For the purpose of carrying out this resolution the committee or subcommittee is authorized to sit and act during the present Congress at such times and places within the United States, its Territories, and possessions, whether the House is in session, has recessed, or has adjourned and to hold such hearings as it deems necessary.

Mr. EDMONDSON. Last year this subcommittee, which had the same membership that it now has, held a series of hearings in Washington for that purpose.

When the 85th Congress reconvened the subcommittee was reconstituted under the general committee authority of the House Committee on Interior and Insular Affairs, and I think it is particularly appropriate that we would hold our first hearing of the 85th Congress, and our first field hearings, in the district of the gentleman who was the author of the bill creating the subcommittee and assigning this undertaking.

Congressman Saylor has not only made many friends in Congress, but he has also made a reputation for his sincere and fighting interest in the problems of the coal industry. I do not know of anyone who has contributed more to congressional interest in the subject than he has. So it is a pleasure for us to be in his district.

I would like to present to those in attendance the members of the committee who are present.

Congressman William Dawson of Utah is on my left.

Congressman J. Edgar Chenoweth of Colorado is on his left.

Congressman Saylor, of course, is known to every one here.

Mr. George Soule is a staff member of the Committee on Interior and Insular Affairs.

Our reporter, Mr. Karl Veley, has taken many hearings for the different committees and subcommittees of the House.

Now, if the other members of the subcommittee will give me leave, I would like to turn the subcommittee gavel over to our distinguished colleague and friend from this district, Mr. Saylor, and he may want to recognize the other members of the subcommittee briefly.

Mr. SAYLOR (presiding). Ed, I appreciate the honor which you have bestowed upon me. I want to welcome you officially to the 22d District of Pennsylvania. Ever since it has been my pleasure and privilege to represent these folks in Washington, I have maintained that within this district live the finest people on earth. Now I know that every Congressman feels the same way about his district, but if you folks have just enough time here, I will prove it to you.

The coal industry had almost its very beginning in Cambria, Indiana, and Armstrong Counties, the three counties here in Pennsylvania which I have the privilege to represent.

I know that both the men and the companies who operate mines, as well as the United Mine Workers, the officers and members of that great organization, and the men who represent the Pennsylvania Bureau of Mines, welcome this committee's interest in the field of coal and coal research, and appreciate the fact that you have designated this as the first place where hearings would be held in the field.

I know that as soon as Congress provided us the money to come out and hold hearings you informed me that we were coming to Johnstown and to Cambria County. I immediately got in touch with the people who are interested, and I know that they will have some very interesting information to give us.

Mr. Dawson, do you have any remarks you would like to make before we get started here or would you like to make yours at the close of the hearing?

Mr. DAWSON. I think I would prefer to later. I just want to reecho what our chairman has said about the privilege we have in coming to your district, and assure you that our interests in my section of the country are very similar to those you have here. I am sure we all have in mind just one thing, and that is doing the very best job we can to help the industry.

Some people get the notion occasionally that some of these congressional committees go out more for the purpose of entertaining themselves than they do for gathering information, but I want to assure you that this is one committee that, when it does go out, goes seeking information and with the sincere desire to bring something back that is going to be beneficial and helpful to us in framing legislation that might be of good for the country.

That is about all I have, John, and I express my appreciation for being in your district.

Mr. SAYLOR. Judge Chenoweth, do you have anything to say?

Mr. CHENOWETH. I am delighted to be up here with you, John. We have very similar districts. We also have coal problems, and that is why I am here on this subcommittee. We are anxious to see how we can increase the production and consumption of coal.

I want to say this to your friends and constituents here: I do not know of anything you are overlooking in Washington in looking after their interests. I think they are taken care of in good shape, not only the coal people but everyone else. So I am glad to be here with you, John, and to meet with those concerned over the coal industry.

Mr. SAYLOR. Thank you.

To you folks who are here in the audience who have received word of this hearing and would like to offer testimony and have not turned in your names, if you would turn them over to Mr. Soule, I know that before we adjourn this afternoon we will be able to have you all present testimony.

The first witness that we are going to hear this morning is a man who has gained a reputation not only in his local community but throughout the entire coal industry of a man of integrity, a man of ability, and one who is interested in seeing to it that the coal industry is not one that lags behind but tries to really forge ahead. He has been privileged to be designated as the vice president of District No. 2 of the United Mine Workers of America, and it is a pleasure to present the first witness to this committee—Harvey Younkers.

Mr. YOUNKERS. I am substituting, Mr. Chairman, for President John Ghizzoni of district No. 2, who was called out of the district after we received notification that we were to be privileged to present our views concerning the problems confronting the coal industry. He extends his regrets to the committee and hopes that he will be excused for that.

As vice president of District No. 2, United Mine Workers, I have been designated to read into the record his statement and also, if I am privileged, to add any few remarks of my own.

Mr. SAYLOR. You may proceed.

STATEMENT OF JOHN GHIZZONI, PRESIDENT, DISTRICT NO. 2, UNITED MINE WORKERS OF AMERICA—AS READ BY MR. YOUNKERS

Mr. YOUNKERS (reading):

Mr. Chairman, and associate members of the House Committee on Interior and Insular Affairs and Congressman Saylor, we the executive officers of District No. 2, United Mine Workers of America which embraces the coal industry in all or parts of 20 counties in central Pennsylvania and principally the counties of Armstrong, Centre, Clearfield, Cambria, Clarion, Indiana, Jefferson, and Somerset are very happy to appear before your committee to present our views and give our support to the general objectives contained in Congressman John P. Saylor's bill known as House Resolution 400, which we understand would authorize the Federal Government to join with the various States, the coal producers, large commercial consumers of coal and the byproducts industry in a research and development program for the coal industry with the same scope and magnitude as those being planned and/or presently being conducted by the Atomic Energy Commission, the National Advisory Committee for Aeronautics and the National Science Foundation and other similar research groups organized on the national level.

We firmly believe that before support for any plan or program is either given or denied very good and logical reasons should be given for the action taken by our organization, and we believe there is a great need for House Resolution 400 to be enacted into law because:

(1) No research program on a large scale has ever been conducted in the coal industry and our district alone has suffered a tremendous loss of manpower and a substantial reduction in production because of this lack of proper planning, for example: In 1947 there were approximately 35,000 miners employed in district No. 2 with an overall production of 52,504,232 tons, but, by the end of 1956 these figures had shrunk to approximately 24,000 miners and 37 million tons. We attribute most of this loss to lack of planning for added uses of coal by a well-balanced research program. Further, we believe that research activities in behalf of the coal industry have, up to the present time, been feeble and haphazard in planning, scope, and execution, seemingly without a long-range plan to adapt coal to added new uses.

(2) Almost everyone connected with the production of coal has thought of coal and its market potential in terms of its raw bulk form, forgetting its potential in conversion to byproducts use.

(3) Coal has for a long time suffered because of transportation problems such as high iniquitous freight rates which have in many cases

exceeded the price of the coal at the tipple or pithead. Most of the coal-carrying railroads have allowed their coal cars to deteriorate to such an unsafe condition that they finally had to be junked and were not replaced by new coal cars in sufficient number so that we in central Pennsylvania have for the last three summers suffered from an acute car shortage which reduced our normal 5-day workweek to an average of 3 days per week for periods of 10 to 14 weeks each year since 1953, and the railroads were allowed to have large unfilled paper orders for new cars without any hope of early fulfillment, thereby causing the coal producers and miners to lose work and money and also have their customers in far-away places convert to the use of competitive fuels in order to insure constant fuel supply.

(4) Coal has always suffered unnecessarily because of the almost unlimited and unregulated importation of foreign residual oil at below cost of production which replaced about 10 million tons of coal per year and added immeasurably to the coal industry's troubles especially during 1954.

About a year ago, in order to save face the railroad laid claim to successful experiments of coal-burning, steam-powered turbine railroad engines, stating that a 4-unit, coal-burning engine would cost approximately $44,000 per year less to operate than a diesel-powered engine of like power and size, yet very little is being done to change over to steam turbine engines on a large scale, which, in our opinion, is just another example of lost opportunity to explore more fully the potential uses of coal in the field of power generation.

(5) We believe that the enforcement of antismoke ordinances by many cities and municipalities, with only short notices for compliance by the railroads so affected, greatly encouraged the railroads to switch to diesel power, without adequate research to eliminate the excessive smoke problems, thus reducing the coal used by railroads from approximately 117 million tons, in 1925 to an estimated 9.5 million tons, in 1956, representing a loss to the industry of approximately 92 percent or 107.5 million tons per year in railroad needs alone, and very little was done by the railroads, the coal industry, or the Government to save any part of this great loss in coal tonnage. This is just another glaring example of lack of long-range planning to stabilize the coal industry and take full advantage of its great reserve yet unmined.

An example of what can be done in order to increase the efficient combustion of coal in the power field has been achieved by the public utility companies of this country; by way of illustration, in 1925 it required 3.25 pounds of coal to produce 1 kilowatt-hour of electricity and only 40 million tons were thus consumed; yet, by changing from stoker and hand feed to pulverized coal feed it now only requires nine-tenths of a pound of coal to produce 1 kilowatt-hour of electricity, yet the total coal tonnage used by public utilities in 1955 was in excess of 140 million tons which rose to approximately 155 million tons in 1956.

So, progress can be made if we all honestly approach this problem. We believe some of the answers to research and development of the coal industry which should receive the fullest attention of any organized research group should include:

1. The processing of coal to its byproducts uses at or near the mine head instead of moving it long distances in order to reach the byproducts processing plants. We could, therefore, eliminate unneces-

sary freight costs for transporting the impurities of coal which average between 10 and 15 percent. We could also bring added manpower into the coal fields where it rightfully belongs, and could send the finished product in reduced volume to its ultimate markets.

2. More attention should be paid to the fluid transportation of coal between the pit-head and the consuming market, because it has been proven to be entirely practical.

3. More research should be made in the field of converting coal to liquid fuel such as gasoline, lubricants, tars, road-building material, chemicals, plastics, etc. If the Congress of the United States will recognize the need for a stepped-up research and development program for coal, then we can realize the full potential of coal as it affects the economy of this Nation. May we remind the congressional committee that the unmined recoverable coal in this congressional district is at least three times as great as the coal already produced. We urge that the Congress immediately authorize governmental participation in an expanded research and development program in order to safeguard the great coal industry in this country and thereby insure the future prosperity and peace of this great Nation.

Finally, we want to take this opportunity to thank your committee for allowing us to present our views on the subject matter and to promise you that we will cooperate in any way possible to make this great research and development program a success because we believe it is necessary for the continued prosperity of this great Nation, in order to safeguard its liberty and safety. Thank you for your kindness and consideration.

STATEMENT OF HARVEY YOUNKERS, VICE PRESIDENT, DISTRICT NO. 2, UNITED MINE WORKERS OF AMERICA

Mr. YOUNKERS. Now, Mr. Chairman and members of the committee, we appreciate that this is not a very acute problem in some parts of this Nation, but we want to point out that in the 22d Congressional District of Pennsylvania, which has been very honorably represented for some 7 years by Congressman Saylor, I think that he has appreciated some of the disarrangements that can occur when coal is left an orphan; and he has cooperated with district No. 2 and our national organization in trying to solve the problems of coal.

I would like to remind you of the condition which exists in Congressman Saylor's Congressional District, the 22d, by way of some figures.

Everybody knows that I like to deal in figures and statistics. They are rather cold until you associate the human equation with them.

In Cambria County in 1947, which we think was a normal coal year, we had 16,655 miners employed. By 1955, only 9 years later, this figure had shrunk to 8,649 miners, or a loss of 8,006 employable men who had put almost all of their lives' work in the mines.

In Armstrong County, which is another of Congressman Saylor's constituent counties, in 1947 there were 4,441 miners employed in the coal industry, and that had shrunk by 1955 to 1,234 or a loss of 3,117 men, and most of them, as in Cambria County, had to seek employment elsewhere out of the State, disarranging family life and all of the attendant social things that we take into consideration.

In Indiana County in 1947 there were employed 6,993 miners. This also shrunk in 1955 to 3,499 miners, or a loss of 3,494 men.

The total in 1947 of miners employed in the 22d Congressional District was 28,089. This had been reduced because of the problems in coal by 1955 to 13,472, representing a loss congressional districtwise of 14,617, and that on a percentage basis amounts to a loss of 52 percent of the miners who were employed in 1947 in this congressional district who had lost their jobs by 1955.

We realize that some of this reduction can be traceable to mechanization, but let me assure you that not all of it can be traced to mechanization, because the loss of tonnage from 52 million to 37 million is a loss that is not attributable to mechanization but is attributable to the fact that competing fuels and other conditions have made it unnecessary in the eyes of the consuming public or in the mind of the consuming public to use this amount of tonnage, and it is a great tonnage.

We are told that in this State mineable coal is so much greater than coal already mined that it is almost fantastic. There is supposed to be around from 60 to 70 billion tons yet in reserve that can by some method be recovered. We were told not too long ago, just about 2 weeks ago that the State of Pennsylvania had produced down through the history from 1790 when the first ton of coal was produced commercially—it had finally reached the vast and fantastic figure of 8 billion tons. That is a large figure, but in comparison with the coal still in reserve it is a very small figure. And the coal is here. There is not anything you can do to take it away except mine it and put it to its various uses.

We have been told by various governmental agencies that you can only plan on 16 years of natural gas supply at the present rate of consumption, and about 32 years of petroleum supply in this country. That puts us at the mercy of any foreign power if we run out of our own natural supply and have to rely on transportation to this country over the seas, or whatever way you want to bring it in.

We just believe that we should first take care of our own problems here and plan against the future. There is a great potential future for coal, but we must have a coordinated high-level stepped-up program of research and development which will take on the prestige of the research efforts made by the Atomic Energy Commission and other like commissions. We think this is serious enough to merit the consideration of this administration and future administrations because it is our own natural resource.

Again, I want to thank all of the members of the committee for your indulgence and particularly want to thank you, Congressman Saylor. Thank you.

Mr. SAYLOR. Thank you, Mr. Younkers. I do not know whether any of the members have any questions they might desire to ask you.

Mr. Edmondson, do you have any questions you would like to ask.

Mr. EDMONDSON. No questions, except that we will appreciate any supplemental views that your organization has as to a specific type of Government research program that you support. You said along the lines of the Atomic Energy Commission, the National Advisory Committee for Aeronautics, and the National Science Foundation, which represent three fairly different types of research programs.

Mr. YOUNKERS. Yes.

Mr. EDMONDSON. I am not asking you at this time to be specific about it, but if you would desire to amplify that, we would be very interested in having your amplified views on that subject. I think you have a fine statement.

Mr. YOUNKERS. Mr. Chairman, we were hoping you would give us the privilege to give added information and our views on a more specific level than this has been, because our notice was rather short on this and we did not fully understand the objectives of Resolution 400 until just about 2 days ago.

Mr. EDMONDSON. Resolution 400, of course, is the pilot resolution that created this committee.

Mr. YOUNKERS. That is right.

Mr. EDMONDSON. And as yet I do not think there has been any legislation that is specific on the subject of what kind of action the Government is going to take next.

Mr. YOUNKERS. We understand that, and we were hopeful that you would give us an opportunity to add our views on specific lines that we think can be explored.

Mr. EDMONDSON. If you will mail them into Congressman Saylor, I am sure he will see that the committee gets them.

Mr. YOUNKERS. We will be happy to.

Mr. EDMONDSON. I do want to thank you for a very fine statement.

Mr. SAYLOR. Mr. Dawson.

Mr. DAWSON. Mr. Younkers, on page 2 of the statement it says that the railroads were allowed to have large unfilled paper orders for new cars without any hope of early fulfillment. What do you mean by that statement?

Mr. YOUNKERS. An order was placed, as we understand it, and some publicity was given to it that 1 large railroad company took advantage of it, that they could get a tax exemption, but they had to show these cars on paper, and 8,000 cars were placed on order at one time, as we understand it, as a matter of public press.

Mr. DAWSON. They got the advantage of some tax concessions by simply placing an order for cars?

Mr. YOUNKERS. They were to place the order before December 15 of that year, and placed a large order of over 8,000 cars. The total was 13,000 coal cars.

Incidentally, that same railroad is in great need of additional coal cars, because throughout Cambria County, here, we suffered for a period of about 14 weeks last summer and summer before because of the car shortage on the Pennsylvania, the C. & I. Railroad, and it did affect, as we understand, one of our major steel companies in this vicinity.

Mr. DAWSON. If they actually placed their orders, how come the orders were not filled?

Mr. YOUNKERS. We were told this: that the car shop in Bethlehem Steel had sufficient orders to do them for approximately 4 years, in that shop alone, to make new cars.

Mr. DAWSON. Then the blame is not on the railroads; it is on the people who are manufacturing the cars. Is that right?

Mr. YOUNKERS. In part. But Mr. Congressman, I would like to make our views very plain. The various coal-producing companies have for years complained about the condition of these railroad cars

which were still in use, and a number of them had to be kicked through the tipple unloaded because they were not in loadable condition.

The railroads then, as we understand it—we have certain communications with one railroad complaining about the very unsatisfactory service to the coal producers in our area here, and, of course, they said that the reason for it was they did not have enough rolling stock; until the rush was over they could not guarantee regular supply of railroad cars.

Mr. DAWSON. Do we have any representatives here today from the Bethlehem Steel Co. or others who are manufacturing these railroad cars?

Mr. YOUNKERS. I do not know whether you do or not. I am not in a position to say.

Mr. DAWSON. Did I understand you to say that the Bethlehem Steel does manufacture railroad cars?

Mr. YOUNKERS. Oh, yes. The car shop in Johnstown has many hundreds of cars on order. In fact, that is all they do—manufacture railroad cars, coal hoppers, as we call them. I go through there almost every evening, and you can see brand new cars being taken out.

Mr. DAWSON. But they are unable to keep up with the demand; is that right?

Mr. YOUNKERS. Presently; yes. Only that one time, not many years ago, they did not have enough orders to keep the car shop in full operation.

Mr. DAWSON. Would it not be advisable to expand their operations sufficiently to put out these additional cars, and perhaps give employment to some of these miners who are out of work?

Mr. YOUNKERS. Mr. Congressman, that, of course—I am not the head of Bethlehem Steel. I doubt very much that they could expand their scope of operation in Johnstown very much. They do make cars at other plants of Bethlehem Steel. I do know that.

Mr. DAWSON. I do have one other question. On page 4 of the statement, paragraph 2, you say that more attention should be paid to the fluid transportation of coal between the pithead and the consuming market. What do you mean by that?

Mr. YOUNKERS. The Pittsburgh Consolidation Coal Co. either has or is putting into operation 110 miles of 10¾-inch pipeline where coal is being transported to the outskirts of Cleveland from someplace down the Ohio River. All of their experiments and tests have proven that even in the winter fluid transportation is practical. In fact, they intend to extend their pipeline facilities for fluid transportation.

Mr. DAWSON. That is a process of grinding the coal very fine and mixing it with water and running it through the pipes?

Mr. YOUNKERS. That is right; and then dehydrating it at the other end. In fact, if you are going to avail yourself of the full potential of coal, it will have to be pulverized, will have to be ground, because that is what the public utilities have found is the best method of combustion and the best method of converting to its component parts; that is, first reduce to pulverized form, extract the tars and other chemicals and what you will. Even with their research so far, they have found 500 different uses of coal already for medicinal purposes, plastics; during the war, even rubber. Coal played a very definite part in this substitute rubber that we had to make. We understand

that the Government since that time has sold a number of these plants and they are in this use at the present time.

Mr. DAWSON. One more, and this will be my final question.

Mr. YOUNKERS. I do not mind, Congressman.

Mr. DAWSON. We have heard a lot of testimony before our committee in regard to the flooding of your mines in Pennsylvania. In fact, I think we passed a bill; did we not, John?

Mr. SAYLOR. Yes.

Mr. DAWSON. To appropriate Government money to help to drain the mines in Pennsylvania. If I remember rightly, it was rather a sad and sorry tale.

You state that you have immense reserves. Are these reserves more difficult to get out by reason of flooding? Or are you getting deeper and deeper all the time, and are the costs of production going up by reason of the depth you are required to go to get into these reserves?

Mr. YOUNKERS. Congressman, of course I think what you have reference to is the anthracite. They have the flooding condition much more acute than we do. There is very little flooding in the bituminous area of Pennsylvania, which comprises all or part of 28 counties.

We do know that the Congress has appropriated or been asked to appropriate $8½ million in order to help take the water out of anthracite mines, and none of that has been earmarked for bituminous use.

Mr. DAWSON. To what depth do you go to get bituminous coal, on an average, in this area?

Mr. YOUNKERS. The average cover in this area outside of stripping—of course, we have a tremendous reserve of strippable coal with less than a hundred foot overburden. In 1 county alone, they claimed 3 years ago there was still 350 million tons of coal recoverable by the strip method, that is, less than a 100-foot overburden; and that is Clearfield County.

The strippable coal in this 20-county area which I have the honor to represent as far as the workers are concerned probably will run to six or seven hundred million tons.

As to the depth that we go, our mines are all either drift, shaft, or slope. The deepest shaft that I know of is around 700 feet. Then, of course, your seam is comparatively level after you reach down that far. But a lot of our mines are entered by the drift method. In other words, you get to a hill and the coal seam remains rather level, and you just go through the rock and earth until you hit the coal seam itself.

Mr. DAWSON. What is the width of your average seam in this area?

Mr. YOUNKERS. You mean the thickness?

Mr. DAWSON. Yes.

Mr. YOUNKERS. Central Pennsylvania has the most varied coal seam, we think, of any other county or any State. We have some coal that they claim is only a foot in thickness. Then we have some in our district here that is as much as 7 feet. I guess in the Pittsburgh district it is thicker than that. I am not too familiar with the Pittsburgh district. I am, I think, quite familiar with what we call eastern Pennsylvania, which is in fact central Pennsylvania.

Mr. DAWSON. That is all. I want to commend the witness for a very concise and forthright, factual statement. I think he has rendered a service to the committee in the information he has given us.

Mr. YOUNKERS. I want to thank you for your patience.

Mr. SAYLOR. Judge Chenoweth.

Mr. CHENOWETH. I wanted to join my colleague, Mr. Younkers, in commenting that your statement was very interesting. It reminds me very much of conditions in Colorado. But you have not suffered as heavy a loss as we have in the Colorado coalfields.

Mr. YOUNKERS. We know that.

Mr. CHENOWETH. You have only lost about 50 percent of your miners, I notice from your statement. We have lost much heavier than that. So you see, other sections of the country have problems even more difficult than you have right here.

You have given your figures for 1955. In 1956 did you have more men working than in 1955?

Mr. YOUNKERS. Yes. Those figures—incidentally, the department of mines here is represented by my good friend, Mr. Evans, deputy secretary. It is not required under the law for the coal companies to make their final yearly report until February 20, which is several days away.

Mr. CHENOWETH. But you have a list of your members, do you not?

Mr. YOUNKERS. Yes.

Mr. CHENOWETH. You know how much they are working?

Mr. YOUNKERS. Yes.

Mr. CHENOWETH. How does that compare as between 1955 and 1956?

Mr. YOUNKERS. They have probably had an increase in work for the members of the United Mine Workers to the extent of about 1,200.

Mr. CHENOWETH. All of these mines are unionized here, are they?

Mr. YOUNKERS. No, they are not.

Mr. CHENOWETH. What percentage is?

Mr. YOUNKERS. The percentage of tonnage is about 72 percent unionized.

Mr. CHENOWETH. These figures you gave here are just for your organization, the United Mine Workers?

Mr. YOUNKERS. No, this is districtwide, and the nonunion coal is almost exclusively confined to strip.

Mr. CHENOWETH. What percentage of your production is strip mining?

Mr. YOUNKERS. About 39 percent.

Mr. CHENOWETH. 39 percent?

Mr. YOUNKERS. That is right. It will run 40 percent. That is the estimate, 40 percent of the total production in eastern Pennsylvania, which is our district.

Mr. CHENOWETH. You mentioned the great loss of consumption in coal by railroads. Is not that business gone forever, in your opinion?

Mr. YOUNKERS. No.

Mr. CHENOWETH. The railroads have all gone to diesel power, have they not, in this country?

Mr. YOUNKERS. Again, Mr. Congressman, I perhaps did not make myself plain. They claim that there is some thought or some hope that they will reconvert to turbine engines.

Now what we again cannot understand—this is a matter of their own figures. They are not our figures at all. They claim that their

prototype in coal-burning steam turbine of 4-unit engines similar to the diesel, that over a year's operation the saving will be $44,000 per unit.

Now the Chesapeake & Ohio Railroad in the South, the Virginian Railroad, are doing some very serious research, and we understand that there is great hope they will restore some lost coal to use in these new engines.

The thing that seemed to worry them is whether or not they would have to junk the diesel unit in order to use the steam turbine unit, and they claim that their unit can be set in, the deisel unit can be taken out and the turbine unit can be set in there. Of course, again, that is long range.

But I say this, and our organization says this: that the cities and the municipalities with antismoke ordinances, putting them into effect on short notice, were responsible in some part for dieselization. Now they claim that this new coal-burning steam turbine, with this they can reduce the smoke output one-third below the present standards allowed for smoke in these large cities and communities.

Mr. CHENOWETH. I am not familiar with your situation here, but among the western railroads I do not think there is any plan or any intention of returning to coal. At least I have not heard anything about it. Some of the railroads own their own coal mines, which they have abandoned and gone to diesels.

Mr. YOUNKERS. That is right.

Mr. CHENOWETH. I do not want to discourage you, but I certainly would not look forward to the railroads as a very heavy user of coal in the near future. That would be my own observation.

Mr. YOUNKERS. Mr. Congressman, if they are going to transport great quantities of oil and they are going to ignore the use of coal and then be brought up short sometime in the future because fuel oil is not available, that is shortsighted planning.

Mr. CHENOWETH. I am not a railroad executive and I have had no part in these decisions, but the decision has been made. It is obvious I think. There is not a single steam engine operating on any line in Colorado right now.

You mentioned the untapped coal resources in Pennsylvania. We have got quite a little coal in Colorado that has not been tapped.

Mr. YOUNKERS. Much more.

Mr. CHENOWETH. It is not all here in Pennsylvania.

Mr. YOUNKERS. I know that.

Mr. CHENOWETH. Apparently there are no immediate prospects it is going to be tapped very soon.

Let me ask one other question. Does your organization, the United Mine Workers, which, of course, is vitally affected by the production of coal—have you given any thought in your own organization to any type of a research program, either in collaboration with producers, operators, by yourselves, or in conjunction with the Government? Do you have men working on that in your organization?

Mr. YOUNKERS. Mr. Congressman, in answer to that, I want to make a statement that was made by President John L. Lewis years ago that he on behalf of the United Mine Workers as early as 1936 offered the coal operators of this country an initial $500,000 for research work if they would equal it, with the thought that there would be more available in the future.

Do you know what he was told? Whoever represented the operators said, "We do not need vast sums of money for research because coal will always be needed on a ton basis." We have disagreed with a large segment of the coal industry on that very same statement. We think that coal in bulk form is not going to be in demand in the future, but coal in its reduced and diversified byproduct form will be highly necessary in the future.

Mr. CHENOWETH. As I understand the situation then, your organization is still willing to participate in the research program?

Mr. YOUNKERS. I cannot speak for Mr. Lewis. I would speak for Harvey Younkers. My hope is they will.

I do know this: that some coal companies have spent a pretty substantial sum. Pittsburgh Consolidation, for instance, have spent over $14 million, but they are an outstanding and isolated company.

Now if they would have pooled their efforts and had a well-planned long-range program to look into the future potentials of coal, I think we would not have this problem either in Colorado or in Pennsylvania at the present time.

Mr. CHENOWETH. Has this company had some success with this operation and experiment?

Mr. YOUNKERS. Yes. Mr. Pursglove has a very illuminating article which you will probably have inserted in the record. I do not know. I will not speak for him. But he is vice president of Pittsburgh Consolidation Coal Co. in charge of research, and he has a very good article in the January issue of Coal Age dealing with their efforts in the matter of the byproduct field of hydrogenation of coal into gas and what they call the char system of conversion. I have read it over, and I think it is a most excellent article, dealing with some of the efforts made. Again on a small scale, because in order to solve this problem I think you will have to spend, or someone will have to spend, in the neighborhood of $500 million over a long period of time. Not allocated in one session of Congress. But, again, that has to be over a long period of time, and it has to be an honest and concerted effort on everybody's part. That is our judgment.

Mr. CHENOWETH. You feel that is vital to the future of the coal industry?

Mr. YOUNKERS. Yes. Either that is going to be a reality or the coal industry is going to lose its identity in the economy of this country.

Mr. CHENOWETH. Mr. Chairman, that is all I have. I have greatly enjoyed this opportunity to discuss the situation with you, Mr. Younkers.

Mr. YOUNKERS. I, too, sir.

Concerning your Colorado situation and the Utah situation, we too realize that because District No. 22 of the United Mine Workers is located there.

Mr. CHENOWETH. District 15 in Colorado.

Mr. YOUNKERS. Yes, 15, and the other in Utah.

Mr. CHENOWETH. You probably know Mr. Hefferly.

Mr. YOUNKERS. I know him quite well. Frank and the boy.

Mr. CHENOWETH. They are very good friends of mine.

Mr. EDMONDSON. Mr. Younkers, did I understand you to say that your estimate or your organization's estimate of the scope of the program to be needed in research was $500 million?

Mr. YOUNKERS. Not immediately. That is mine, not my organization's.

Mr. EDMONDSON. That is right.

Mr. YOUNKERS. Because of the amount of money already spent. We were told that Union Carbide and Du Pont are presently in the coal research field for different uses, and no one knows how much money they are presently spending. Now some of their research, particularly Union Carbide, as we understand it, we are not in sympathy with it because that is underground gasification of coal, and we are sick and tired of manless industries. What we need is work for our men, the men we represent. And to set fire to a coal seam far underground and let it burn and take the ingredients from the gas and smoke coming from that is not our idea of a solution to the coal industry, because then you have an industry of automation. We are not in sympathy with that.

Mr. EDMONDSON. But your figure of $500 million was not a figure of a Government expenditure either?

Mr. YOUNKERS. No, no, no; I wouldn't; no. I wouldn't even think of that, because I think this: that the coal industry owes research and expanded research in their own problems. That is what I think.

As I said, Mr. Lewis, as early as 1936, recognized the need, and I was told that is what he offered in behalf of the organization. I do not know who he offered it to. It was given to us on good faith, and we were told that the coal operators, whoever represented them, said it is not necessary to have research. I think we are finding out it is quite necessary.

Mr. EDMONDSON. Thank you.

Mr. SAYLOR. Thank you, Mr. Younkers.

Mr. YOUNKERS. I again want to take this opportunity to thank all of you for your patience and indulgence.

Mr. SAYLOR. If you have any other statements you desire to submit to the committee, if you send them to me, I will be only too happy to see they get in the record.

Mr. YOUNKERS. We will, Mr. Congressman, because we would like to specify the various fields that we think, on present information, will be available for research purposes, and we think it is worth it. I want to thank you again.

Mr. SAYLOR. Thank you.

The secretary of mines for the State of Pennsylvania is the Honorable Joseph T. Kennedy. Mr. Kennedy unfortunately is ill, but he has designated a man who is very familiar with the coal problems of the central Pennsylvania and western Pennsylvania area, the deputy secretary of mines, Mr. Lewis Evans, who is a life-long resident of this area.

Mr. Evans, it is a pleasure to welcome you to this committee as a representative of the Pennsylvania State Department of Mines, one that I think is the finest in the country.

STATEMENT OF LEWIS E. EVANS, DEPUTY SECRETARY, DEPARTMENT OF MINES AND MINERAL INDUSTRIES, COMMONWEALTH OF PENNSYLVANIA

Mr. EVANS. Mr. Chairman and members of the subcommittee, as Congressman Saylor has said, I am employed by the Department of Mines and Mineral Industries, Commonwealth of Pennsylvania.

The chief function of our department, of course, is in the field of mine inspection to see that mines are operated safely, and that the lives and the health of men who work in the mines is adequately protected.

We are also the agency of State government that collects the statistics of the industry and publishes them once a year and then makes it available to those people in the industry and people outside of the industry who may have need for it.

I thought it might be interesting to the committee to give you just briefly some of the statistics of the bituminous industry in Pennsylvania. I do not have any prepared statement here this morning. I did not know about this hearing until 2 days ago. I am sorry that I did not come here with a prepared statement.

Bituminous coal in Pennsylvania is mined in 32 counties west of the mountains in what we call west central and western Pennsylvania. For the year of 1956 there were 1,824 mines operating in the bituminous region. That includes all types of mines, all sizes of mines, and includes strip operations.

There were 461 deep mines that employed 5 or more men. There were 884 small deep mines that employed less than 5 men. There were 459 strip operations.

In 1956, in the bituminous region of Pennsylvania there were employed 51,361 men; 45,961 of these men were employed in deep mines and 5,400 in strip mines.

In the year 1955 there were employed in the bituminous industry of Pennsylvania, 52,103 men. There was a slight decrease in 1956 over 1955, seven-hundred-and-some men.

The industry in Pennsylvania in 1956 produced 89,273,730 tons of coal. The industry in 1955 produced 85,424,677 tons of coal, or an increase of 1956 over 1955 of 4,231,053 tons, or an increase percentagewise of 4.9 percent.

The average working time for the bituminous mines in Pennsylvania in 1956 was 18 days per month.

As the previous person said here, there are vast reserves of recoverable coal in Pennsylvania. The statistics of our department show that since coal mining began on a commercial basis in Pennsylvania there has been mined 8,713 million tons of coal. Recoverable reserves are 41,172,636,000. Of course, all of this coal is not recoverable at the present time. The cost would be prohibitive.

The thickness of the coal seams in Pennsylvania runs from approximately 2 feet in the central part of the State here to 9 feet in the western part of the State.

There are some 24 seams of coal. Of course, they are not all constant throughout the whole of the bituminous region. The main seams

that are presently worked are in the western part of the State. The Pittsburgh seam, which is a high seam, runs up to 9 feet. And in Erie, Pa., the 3 Kittanning seams and the 2 Freeport seams.

Briefly, that is some of the statistics of the industry here in Pennsylvania.

I thought that it might be interesting for the subcommittee to know, and you probably already know, that in the 1955–56 session of the Pennsylvania General Assembly a coal-research board was created under the department of mines and had appropriated to it $500,000 to be used at the discretion of the board in coal research. This committee is represented by 2 outstanding operators who are connected with the bituminous-coal region, 2 outstanding men who are connected with the anthracite industry, 2 men who are representatives of the collective-bargaining agencies in the industry, both the bituminous and anthracite industries, and the secretary of mines.

This money has been allocated after the board had held a number of meetings, and it is quite possible that there are people here from State University today who may be able to tell you more in detail about some of these projects. But, under this board, Pennsylvania State University is going to conduct seven projects, and I have them spelled out in case the committee may be interested. In fact, I will be able to furnish the subcommittee with copies of these projects.

Carnegie Tech, in Pittsburgh, will take 1 project at a cost of $20,000. The 7 projects at Pennsylvania State University are at a cost of $144,200.

The board also has joined with Bituminous Coal Research, Inc., to work together jointly, and that project will cost $60,800.

The Anthracite Institute will conduct 1 project, which is going to cost $17,500.

Pennsylvania State University will also conduct 6 projects in the anthracite industry at a cost of $199,500.

So all of the money that was allocated to the coal board in the 1955–56 session of the General Assembly of Pennsylvania has been allocated. The board thought it was wise, of course, to allocate this money to institutions that were already set up and doing some work in the field of research on both bituminous and anthracite coal.

Of course, it is the department's intention, and I know it is the Governor's intention in Pennsylvania, to attempt to have this appropriation increased in this session of the legislature to get more money for the coal board. How successful we are going to be, of course, we do not know.

Of course, we know that the problem existing in coal here in Pennsylvania is not a problem that is just peculiar to Pennsylvania, it is a problem that every coal producing State has. It is just our idea and thought that, of course, the Federal Government could do much more in the field of research than individual States can do, who may be working at cross-purposes and doing a lot of duplication. But the industry in Pennsylvania, the operators, and all of those connected with the industry are attempting to do whatever they can themselves, along with the help of the State government, to try to find some ways and means in the field of research that there could be greater uses and greater productivity of both bituminous and anthracite coal.

I think that is all I have, Mr. Chairman.

Mr. SAYLOR. Thank you, Mr. Evans. I know the members of the committee will appreciate it if you could furnish for the record a breakdown of the various projects and the description of the projects which the board has already designated.

Mr. EVANS. I will do that.

Mr. SAYLOR. To the various institutions.

Mr. EVANS. We will be happy to do that.

Mr. SAYLOR. I also might say to you, Mr. Evans, if the Department of Mines of Pennsylvania, yourself, or Mr. Kennedy or anyone else desires to supplement your statement, if he will send me the information I will be only too happy to make it a part of the record.

Mr. EVANS. We will make all information available to you we can.

Mr. SAYLOR. Mr. Edmondson.

Mr. EDMONDSON. I certainly want to congratulate your State upon the step which it has taken to stimulate and to encourage and direct research programs in this field. I think that certainly is a tribute to the initiative of your own legislature and your own State government, that you have taken this step in realization of the problem that we have.

Mr. EVANS. Thank you, sir.

Mr. EDMONDSON. I think you apparently have started something that will prove very helpful to the industry.

Mr. EVANS. I hope we have, sir.

Mr. EDMONDSON. I had a question about these employment figures which you gave us—something like 50,000 employed in 1955, I believe.

Mr. EVANS. That is right.

Mr. EDMONDSON. How long would a miner have to work to be classed as employed in these figures? Would he have to average 18 days per month, which is the average working time, to be classed as employed?

Mr. EVANS. No.

Mr. EDMONDSON. How would you determine that a man has been employed during that year?

Mr. EVANS. So long as he was on the payroll of a coal company, if he happened to be working in a mine and only worked 4 days a month, he would be classified as employed. The number of days the operation worked would not change that. He would have to be on the payroll, and then he is considered to be an employee in the industry.

Mr. EDMONDSON. So these would represent over 50,000 different individuals?

Mr. EVANS. That is right.

Mr. EDMONDSON. With varying periods of employment in the industry, and some might be every day and some might be only a month or two during the year. Is that right?

Mr. EVANS. No; that is not exactly it. Our records are made up at the end of each year. The information comes from the operators to our mine inspectors on which they say how many are employed at their operation.

Mr. EDMONDSON. At that time?

Mr. EVANS. That is right.

Mr. EDMONDSON. That particular date at the end of the year?

Mr. EVANS. That is right.

Mr. EDMONDSON. I see. So your total employment then might be more than that figure during the year?

Mr. EVANS. That is right. There may have been some operation that maybe employed 600 men and maybe they laid 300 off.

Mr. EDMONDSON. Is this date that is selected to determine this employment figure normally the time of average production, below-average production, or of above-average production? Or can you say there is a time of average production?

Mr. EVANS. I do not understand what you mean, Congressman Edmondson.

Mr. EDMONDSON. I am just trying to determine how accurate a figure on a day-by-day basis in the industry this total figure that you have for employment in the industry would be.

Mr. EVANS. This is an accurate figure. When I say that 51,361 men are employed in the bituminous region of Pennsylvania, that means 51,361 men were employed in the industry as of the last day of December 1956.

Mr. EDMONDSON. That is right.

Mr. EVANS. There may have been some periods during 1956 when there were more than 51,000 men employed or there may have been other periods when there were less than 51,000 men employed.

Mr. EDMONDSON. That is what I was trying to get at; whether that would be a time that would be a pretty accurate picture of the year-round employment in the industry.

Mr. EVANS. That is right.

Mr. EDMONDSON. You feel it would be?

Mr. EVANS. Yes.

Mr. EDMONDSON. No further questions.

Mr. SAYLOR. Mr. Dawson.

Mr. DAWSON. If I remember your figures, Mr. Evans, you stated that you had approximately 700 fewer men employed in 1956 than you had in 1955.

Mr. EVANS. That is right, sir.

Mr. DAWSON. And that you produced over 4 million tons more in 1956 than you did in 1955, with 700 fewer men?

Mr. EVANS. Yes.

Mr. DAWSON. To what do you attribute that increase in production?

Mr. EVANS. Increased mechanization principally.

Mr. DAWSON. That is all, Mr. Chairman.

Mr. SAYLOR. Judge Chenoweth.

Mr. CHENOWETH. You feel this mechanization is going to continue and that the demand for coal miners then will decrease in the future. What are the prospects for additional employment in this coal field?

Mr. EVANS. I do not think it is too good for additional employment in this coal field.

Mr. CHENOWETH. You increased your production about 5 million tons, I notice.

Mr. EVANS. Four million.

Mr. CHENOWETH. In 1956 over 1955. In 1957, suppose you increase it another 5 million tons. That still is not going to reflect any additional employment, as I understand.

Mr. EVANS. It could. I do not know. It could reflect additional employees. I do not think there would be great numbers coming back into the industry.

Mr. CHENOWETH. These men who are displaced, do they stay here or do they leave the coal fields and find other employment?

Mr. EVANS. Some of them who are young enough, of course, go out and look for other employment. They have got to pick up and leave and take their families with them.

Those that are up in years a little bit, of course, many of them are here in the coal fields, a number of them are on relief. I do not know how many thousands of them are getting Government surplus food.

Mr. CHENOWETH. That is right now?

Mr. EVANS. That is right.

Mr. CHENOWETH. Right in this field here?

Mr. EVANS. Right in this district, this county.

Mr. DAWSON. Will the gentleman yield?

Mr. CHENOWETH. Yes.

Mr. DAWSON. To make an observation as to what is occurring in our coal fields in Utah. We find that the type of people who go into the mines are those who are the older people. Many of them come from foreign countries. That is their life. It is the only thing they know. When people say, "Well, move into some other industry", that is not as easy as it sounds. That type of people just are not the type who can easily put themselves into something else.

Mr. EVANS. That is right.

Mr. DAWSON. And the young people we have coming along are not trained to go into the mines, and do not want to go into the mines. That is one of the serious things of this whole unemployment picture. If we let the employees out of work who have been brought up in that field, we are going to find it very difficult to train a new generation to come in who will want to go into the mines rather than to seek employment down at the steel mills or somewhere else where the conditions might be a little better. Is that the situation here?

Mr. EVANS. That is true. There are not any young men going into the coal industry in Pennsylvania. There just are not any jobs to be had in the industry. Consequently, the men who have been in the industry, of course, are getting older. There are not any new men being trained in the industry to speak of.

Mr. DAWSON. You are not going to train them overnight, are you?

Mr. EVANS. No, you are not. Coal mining now is a highly skilled job in mines that are mechanized. I mean they are all skilled men.

Mr. CHENOWETH. What percentage of your mines are mechanized?

Mr. EVANS. Well, in deep production in Pennsylvania—I am hazarding a guess on this—I would say that 85 percent of the production comes from mines that are mechanized.

Mr. CHENOWETH. What percentage of this production is from strip mines?

Mr. EVANS. Statewide about 25 percent. Mr. Younkers talked about 40 percent. Of course, he was talking about central Pennsylvania. That is true. But statewide it is about 25 percent.

Mr. CHENOWETH. Is strip mining on the increase?

Mr. EVANS. Slightly. It had about the same percentage of increase last year that deep mining had.

Mr. CHENOWETH. You do not need the men for strip mining that you do for deep mining?

Mr. EVANS. No, very few.

Mr. CHENOWETH. Would that account partially for the number of men employed?

Mr. EVANS. No. The strip industry, with the tremendous production they have, does not employ very many people like deep mining does.

Mr. CHENOWETH. This 5-million ton increase last year, what percentage of that would you say came from strip mining, that is, in 1956 over 1955?

Mr. EVANS. I would say it was about half from strip and half from deep.

Mr. CHENOWETH. Do you think that trend will continue?

Mr. EVANS. I think so.

Mr. CHENOWETH. That is all, Mr. Chairman.

Mr. SAYLOR. I would just like to say that I concur with what Mr. Dawson has observed with regard to these people who have been in the mining industry all their lives. Suddenly you will find a mine, which is probably a high-cost mine, has closed down, and the people who have been employed there have in most instances in this community bought their own homes, the companies have transferred the ownership to them, and some of them own them, have them completely paid for. You just cannot ask people, after having lived in a community for 30 or 40 years and worked there, to just pick up and move. It just is not that easily done. Young people, yes, who do not have their roots down, can move without too much trouble, but the older folks cannot.

I noticed a release that just came out on Monday from the Department of Agriculture saying that the State of Pennsylvania is using more surplus food for relief than any other State in the Union. A large part of it is due to the displacement in the coal fields.

Thank you, Mr. Evans, for your statement. We appreciate your being here.

Mr. EVANS. Thank you, gentlemen.

Mr. SAYLOR. The next witness we have is Dr. Harold J. Rose of the Bituminous Coal Research, Inc. Dr. Rose.

STATEMENT OF HAROLD J. ROSE, VICE PRESIDENT AND DIRECTOR OF RESEARCH, BITUMINOUS COAL RESEARCH, INC., PITTSBURGH, PA.

Mr. ROSE. Mr. Chairman and members of the subcommittee, last summer at the first hearings I submitted a number of copies of a statement and some attachments of which I believe Mr. Soule has copies here today. There has been no change in the content except a little updating. It would take me about 11 minutes if I go over this. I will do as you wish. I do not believe I could save much time briefing it.

Mr. SAYLOR. Go right ahead.

Mr. ROSE. My name is Harld J. Rose, and I reside in Pittsburgh, Pa. I am vice president and director of Research of Bituminous Coal Research, Inc., which is the national research association for bituminous coal. My experience includes 37 years of research and engineering development work related to coal. I appear before this committee as a representative of Bituminous Coal Research, Inc., both the administration as well as the technical phases.

Mr. DAWSON. Who is that organization? Who employs you? Where does the money come from?

Mr. ROSE. That is an organization consisting of several hundred member companies, mostly coal-producing companies, coal sales organizations, coal-carrying railroads, several large coal users such as electric utilities who use coal, several chemical companies. In other words, it is a nonprofit research organization devoted to bituminous coal. The membership is open to anyone so far as I know.

Mr. DAWSON. Does all of the money come from the producers? Do the mine workers, for instance, contribute to this organization?

Mr. ROSE. No, sir, not to my knowledge, but it is a voluntary membership. There are different dues set up for coal producers and railroads and for others. It is a schedule of very modest dues from which our funds are derived.

At previous hearings of this group there has been ample testimony as to the coal reserves—it is important—so I will not go into that.

NATIONAL DEPENDENCE ON BITUMINOUS COAL

Coal has long been the major source of energy in the United States. Factors which have adversely affected bituminous coal production during recent years, have now been offset in part, and it has become clear to well-informed analysts that tremendous demands will be made on coal and coal technology in the years to come. The point I want to make is that the extent to which coal will be able to meet these challenging demands will depend to an important degree on technical achievements based on coal research. Just a few examples out of many.

First, on electric power. The accelerating use of electric power, and the Nation's continuing population and industrial growth will result in further huge increases in demand for electricity. Most of this can best be provided by coal. For example, the Tennessee Valley Authority which began as a hydroelectric development has become the world's largest user of coal for power. TVA burned about 18 million tons of bituminous coal last year in their steam powerplants.

Last summer I had the pleasure of being in one of their plants, which is the largest plant using coal in the world. It burns 16,000 tons of coal every day in the year. One single plant, and that is only one of many plants.

The Atomic Energy Commission uses huge quantities of coal directly or indirectly. During 1956, AEC required electricity produced from about 23 million tons of coal, including power purchased from TVA and private utilities. The Atomic Energy Commission is the largest consumer of electricity from coal. There is no evidence that for decades to come, power can be produced as cheaply or as safely from atomic sources as from coal in this country. Those who are well informed on the subject have repeatedly emphasized that in the foreseeable future, atomic power can be considered merely as a supplementary source of energy, and that the main reliance must be on coal to meet constantly increasing United States power demands.

Most current estimates are that by 1975, some 300 million to 400 million tons of bituminous coal will be needed each year by ultilities for the production of electricity. While the official figures have not been released, I think it is close to 156 million tons in 1956. It will not be far from that. This compares with 140 million tons burned by them in 1955. However, much research will be needed on coal produc-

tion, transportation and handling, combustion, and stack-gas cleaning, to permit the most effective use of coal reserves and to keep the cost of electricity low in the public interest.

Now a few specific uses for coal.

ALUMINUM PRODUCTION

Within recent months, three new primary aluminum plants powered by bituminous coal have been announced for the Ohio River Valley. These will consume many tons of coal per ton of aluminum produced, mostly in the form of electricity. There are important potentials for further expansions in the use of coal for nonferrous metallurgy of aluminum and other metals.

IRON AND STEEL MANUFACTURE

About 100 million tons of coking coal are required annually by the iron and steel industry, and this may increase to 180 million tons or more by 1980. Much research will be required to adapt available coal reserves to the needs of an expanding iron and steel industry, and to get full value not only from the coke produced, but from the coke-oven gas, coal tar and hundreds of chemicals formed in the coking of coal which are only partly utilized at present.

SYNTHETIC FUELS AND CHEMICALS

As the supply and production of natural gas and petroleum decrease, and their prices increase, huge quantities of synthetic pipeline gas and synthetic liquid fuels from coal will be needed to supplement the natural products. This will require both coal tonnages and technologic achievements in almost fantastic amounts. That is a considered opinion. It is really almost incredible what will be required to make it a reality. Furthermore, the mass production of synthetic chemicals from coal can have an important bearing on American standards of living, since coal is by far the largest national resource of concentrated organic raw materials. The opportunities for such research are almost limitless.

TECHNOLOGIC ADVANCES REQUIRE RESEARCH

While these and other potential expansions in coal markets are very real possibiilities, they cannot be taken for granted. Much will depend on whether the necessary large amounts of research and development work are done to keep the cost of coal reasonable, and to convert technical potentials into realities.

It is in the national interest to make the most effective use of coal which is the Nation's greatest fuel resource. Coal is commercially produced in about 30 States, and it is available in quantities to meet this country's energy and chemical raw material needs for generations to come. For national security reasons it is vital to develop coal's full potentials. And since the economy of the Nation rests so firmly on coal, a prosperous and expanding coal industry made possible by adequate research, will improve the standard of living of every American.

The amount of public and private funds being presently expended on all forms of coal research and development work is small in comparison with the needs and opportunities. A better understanding of this situation, plus appropriate actions, can lead to new levels of American achievement.

I therefore commend the efforts of this committee to study the possibilities of developing new and expanded uses for coal through research.

The subcommittee's Statement of Purpose and Objectives dated May 18, 1956, encompasses too broad a range of problems and topics related to coal to be covered by a prepared statement of moderate length. Fortunately, Bituminous Coal Research, Inc., has made, or has participated in, several studies which have just been published and which bear directly on the committee's inquiry. The balance of this statement will therefore refer primarily to these publications which are available to the committee.

PRESENT SCOPE OF RESEARCH AND DEVELOPMENT WORK ON BITUMINOUS COAL

At the request of the Department of the Interior, the writer and several other senior staff members of Bituminous Coal Research, Inc., cooperated with the United States Bureau of Mines in a survey of current bituminous coal research activities by Federal and State Governments, universities, research institutes, and industry. The findings have been presented in Bureau of Mines Information Circular 7754, published in May 1956, which has been presented to the committee and which you have in your record. I just mention that table 2. Table 2 on pages 4 and 5 of that publication summarizes the types of research projects, types of research organization, expenditures, manpower, and method of approach to the problems. This is the most complete survey which has ever been made of the subject with regard to coal research expenditures and manpower.

In addition to that joint survey, staff members of Bituminous Coal Research, Inc., prepare a concise survey on alternate years, of worldwide coal research activities. The information is collected by questionnaire and supplementary methods. In some years we get it for the United States and in some cases worldwide, and the findings are published in the Mining Congress Journal, and our latest survey, which is in press now, will be out any day. It relates to research in the United States and will be published in the February 1957 issue of the Mining Congress Journal.

I have here with me a mimeographed copy, which is a printed copy with illustrations, which will be available in a few days.

I might interject here something that is not in the statement given to you last summer.

Since this statement was prepared I had the privilege of spending a month of intensive research in Europe, visiting the coal research organizations in the four leading coal research countries there. It was authorized by the board of directors of our organization to find the status. So I spent this time in England, France, Germany, and Holland.

I was personally in coal research laboratories employing something like 2,500 people in coal research, that is, on coal itself, on primary

products from coal. And, of course, in a month's time I was unable to visit many other laboratories which employed additional people.

You will recall that the survey that I referred to showed less than a thousand people could be found in the entire United States in all organizations working in coal research. In 20 working days I was in laboratories employing 2,500 abroad, and very fine laboratories, with splendid equipment brought from all over the world, highly trained people, and doing excellent work.

So I brought back a great deal of information on coal research activities abroad, which I will not expand on unless there should be questions. I just mention this to show we have a great deal of information in our files. It is part of our job in serving the coal industry of the United States to make this worldwide survey.

Mr. EDMONDSON. Could I ask you a question at that point?

Mr. ROSE. Yes.

Mr. EDMONDSON. Does your article cover what is known of coal research behind the Iron Curtain? Do you have anything on that subject?

Mr. ROSE. We have not personally made investigations of that. We get through secondary sources some information. I might say that last summer a group of about 15 British people in the coal industry, representing all phases of the coal industry from top management, I believe, down to production, and probably labor, did make a trip behind the Iron Curtain. I have been assured that I will get a copy airmail of their report when it is issued. Of course. it came out first in classified form.

I had the privilege of meeting several people who were on that trip, but, of course, they were not free to discuss it in detail. I know a little about some of the things that are going on, and there is clear evidence that the amount of coal research and manpower engaged in coal research in Russia is extremely large. There is no question about that.

Mr. EDMONDSON. Do you think it would exceed the effort being made in the European countries you visited?

Mr. ROSE. I do not have factual knowledge, but from some information I have obtained on the number of men employed on specific phases of research in the Soviet, I suspect it is greater than all the people in the United States working on coal research. That is only my impression. I do not have the figures to back it up.

Mr. EDMONDSON. We will be very much interested in detailed information on that as it becomes available to you, Doctor.

Mr. ROSE. I have been assured by one of the men on the trip who wrote certain sections of the report that he will airmail me the copies just as soon as it is released.

Mr. EDMONDSON. Thank you.

Mr. ROSE. Now as to research possibilities for bituminous coal.

Industry problems and opportunities for increasing coal markets through research have been discussed at length in the new Bureau of Mines Information Circular 7754 referred to above. It lists 209 research possibilities, plus considerable explanatory text. Each of these research possibilities would have to be examined—I want to emphasize this next statement I make. It is very important. I am frequently asked which of that is most important to work on, what is the best thing to do.

I have been in administration of coal research for 38 years, and it has been a part of my job constantly to invest money wisely in research and select the most appropriate project and worthwhile things. We found an offhand opinion, a notion or idea is not the way to go about it. If you are going to invest money in research, you take care to use judicious means, just as if you were going to invest money in a manufacturing business or anything else.

So in saying which of those research possibilities are the most promising or the ones that should be attempted first, they would have to be examined in detail to determine the relative urgency, economic and technologic feasibility, most promising methods of approach, applicability of results to small enterprises, which is one of the special subcommittee's special interests, types of research organizations best qualified to handle the various phases, appropriate methods of financing, and so forth, which are some of the questions raised by the committee.

In other words, in our own organization, with a modest budget running somewhat under a million dollars a year, before you can tackle a project, we make a study, we spent several hundred dollars or several thousand dollars in an analysis of the proposed projects to see which ones are most promising, most appropriate, and relative priority. I do not know of any other sound way to invest money in research other than to do a little research on which are the most promising problems. I think that is inherent in a problem.

I have had the pleasure of looking over the printed proceedings of the hearings held last summer of this subcommittee. There is a great deal of factual information. We had most everything there.

One thing I did miss was the matter of research administration, the selection of problems. Practically all the hearings I agree with, but there is a lot that was not covered by that with regard to research administration.

With regard to the present research by the Bituminous Coal Research, Inc., I thought the committee would like to know a little bit about the program of research and development work which is being done by the coal industry and affiliated organizations for itself.

As I have already indicated, the Bituminous Coal Research, Inc., is a voluntary research association of several hundred coal producers, coal sales agency, coal-carrying railroads, equipment manufacturers, and large coal users. This organization and its activities are described in the brochure which the committee members have. This was prepared a year ago. Progress has been so fast that we are now revising that. We are starting to write a new one because of advances that have been made since that time.

More detailed information about many of the projects was given by the writer in the accompanying report, "BCR Accomplishments in 1955," which was presented to member companies at their annual meeting on April 19, 1956. At that meeting, other staff members presented additional details on "High load testing of the coal-fired turbine," "Mining research," "The 1956 BCR general research program," and "Technoeconomic research at BCR." As of April 19 of this year, at our coming annual meeting, our senior staff members will prepare a similar report.

Additional information is presented in the organization's illustrated quarterly publication, "Bituminous Coal Research," of which a sample copy (August–October 1955 issue) is attached.

As one example of what research can accomplish, consider the case of fly ash resulting from the combustion of pulverized coal in large power plants. The disposal of this material was formerly a nuisance and expense, but research has proved that it can be a credit item to the power plant, and a valuable material for the construction industry. See the cover and pages 10, 11, 12, and 13 of the attached BCR quarterly publication just referred to, also page 9 of the previously mentioned report, "BCR Accomplishments in 1955."

In one of our publications, our quarterly publication, there is an article on the use of fly ash. For example, the gigantic Mackinac Bridge is being made with fly ash concrete. There is an article in there on that.

It has been proved that this fly ash is a valuable material to the construction industry. For example, the United States Bureau of Reclamation has proved on several large dams that fly ash from coal can be used to produce better concrete masonry, with important savings in cost. In the Hungry Horse Dam in Montana, fly ash was purchased in Chicago, shipped out to the western end of Montana at a freight rate of $10 to $11 a ton. In spite of that fact, they saved a million and a half dollars in the construction of that dam by using fly ash in place of part of the cement, and they made actually a better concrete, as their tests show. That is, you can save considerable sums of money and make a better concrete.

We have made market investigations of the use of fly ash in the construction industry and for highway construction, which show that the potential market from fly ash or pulverized coal from powerplants is several times as great as all the fly ash in all these plants. In other words, the market is potential.

Various people have found that they pay a nominal price for the fly ash, pay for the haulage to the plant, and save something like $10 for every ton used in the process, which can be used in part to reduce the cost of construction, and also make it more attractive to the contractor.

That is just an example of how something insignificant, a nuisance product, can be given a value by research.

Mr. SAYLOR. At that point, does your research show that the chemical content or the sulfur content of coal might make any difference in use of fly ash?

Mr. ROSE. Not directly the sulfur content. It is customary when you make concrete for any large construction job to test all the materials that go in the particular cement, the particular rock, the particular sand, and particular additives, such as fly ash. Those are always tested by regular testing laboratories, and they report on the strength at 1 day, 5 days, 7 days, and so on. The composition of fly ash does vary depending on the source of the coal. Some is more suitable than others.

Incidentally, the type of fly ash that is best for a concrete highway is not necessarily best for a black-top highway. So there is room for some variation there.

Government units are already spending some $7 billion per year for highway construction and maintenance, and the House recently voted for a $51 billion additional highway program. Better highways could be constructed with enormous savings in tax funds by the appropriate use of fly ash from coal.

Lightweight aggregate produced by sintering fly ash also has many important construction uses.

SURVEY OF CHEMICAL AND OTHER PROCESS USES

Bituminous Coal Research, Inc., is making an extensive survey of the present uses and future potentials of coal and power in the chemical, metallurgical, and other process industries. A progress report on this was prepared recently, which was the feature article of the March 1956 issue of the American Chemical Society publication, Industrial and Engineering Chemistry. A reprint of this article, Coal—Chemical and Other Process Uses, accompanies this statement.

I might say our staff examined and read over 3,000 technical briefs and technical articles and references to get the material for that. In other words, we follow world literature not only to see what is being done now, but particularly to participate in developments that may materialize some years in the future.

RESEARCH FACILITIES, PARTICIPATION, AND FINANCING

It is the writer's opinion, based on many years of experience in research administration, that a stepped-up program of coal research should be participated in by all appropriate types of research organizations. This would include Federal and State agencies, universities, research institutes, associations, coal producers, large coal users, and equipment manufacturers. Each type has special facilities, experience, viewpoints, and contacts which will help in solving the many problems, and in getting the results into large-scale use.

I want to point out the question of duplication of research has been mentioned many times during these hearings, and of course we do not want to duplicate any efforts. I have been in research work for a great many years and I have seen very few cases of actual duplication, because if you bring people with different backgrounds to the subject and different interests, they may be working on what by title is the same subject, but what they do and what they find and what they conclude they usually are quite different. So I assure the committee that duplication of research, real duplication, is much less common than might be assumed.

One thing that must be guarded against, and which sometimes is a duplication of research, is where an organization starts out, plans a job, and spends money on research without having examined the technical literature, if the material is published. That is very unwise to do, to start doing your own work without seeing what other people have done and have published. That is a case of possible duplication.

I have seen many cases in my experience where two organizations were working in the same field, on the same subject, and with similar chemical processes. One organization developed highly valuable processes. The other organization had the same materials but could

not get the spark of inventive genius necessary and failed to make the discovery. So there was a case where they covered the same field and one made an important discovery, the other one failed to do so.

The writer endorses the Recommendations for Appraising Coal Research Needs, Developing a Program, and Activating Projects which were prepared by a coal-industry committee and delivered on November 16, 1954, for consideration by the presidentially appointed Interdepartmental Committee on the Bituminous Coal Industry. These recommendations made by the coal industry about 2 years ago suggested a general procedure for formulating a strong program of coal research and development, for determining primary responsibilities and interests, and for financing the program.

In conclusion, it should be pointed out that hundreds of millions of United States dollars are being spent for research in this country to develop atomic power, with no assurance that atomic power can in the foreseeable future compete in economy and safety with power from coal.

The realities of this situation strongly indicate that a stepped-up program of coal research should receive at least as much consideration as is already being granted to the atomic power research program.

Mr. SAYLOR. Thank you, Dr. Rose. I want to commend you for this statement which you have presented to this committee.

Mr. Chairman, I would recommend that the data which has been attached by Dr. Rose to his statement be added to the index of our hearings.

Mr. EDMONDSON. I certainly feel it should be myself. I am a little bit inclined to apologize to Dr. Rose. Had I had personal knowledge of the content of the statement and the material just supplied to us by Dr. Rose, I certainly would not have let our hearings be terminated last summer without hearing from you, Doctor.

Mr. ROSE. That is quite all right.

Mr. EDMONDSON. Because you have made really a significant contribution to the work of our committee. But it is probably an illustration of the point you made a few moments ago that a person should not undertake research without examining the technical literature. In a sense, we are in a research project of the Congress in this hearing.

Mr. ROSE. I know the Congressmen have many responsibilities to occupy their time.

Mr. EDMONDSON. Our major problem is that we try to research too many questions at the same time and are obliged at times to do that. But I do want to congratulate you and the Bituminous Coal Research, Inc., for the very fine material you have placed in our hands, which will be most useful to us.

Mr. ROSE. Thank you.

Mr. SAYLOR. Mr. Dawson.

Mr. DAWSON. I was interested in your statement on atomic power. There are some people who conjure up in their minds the idea that very shortly we are going to have atomic-powered locomotives, with a little reactor placed inside, and all that sort of thing.

I believe down at the University of Utah they are conducting an experiment on an atomic-powered locomotive. I am not too familiar with the details of it, but the word I get is very much along the same line you have expressed here, that it is in the dreaming stage so far, and there are so many problems that they are confronting that we had

certainly better forget the idea that we are going to go overnight into an atomic age and forget all about coal and hydrodevelopment, because if we do we are going to be caught short.

Another thing. Out in my area the Colorado Plateau, where they are recovering most of the uranium at the present time, they are getting pretty well worried about future discoveries. They are getting pretty well at the end of some of their prime ore discoveries. That is something we had better consider in the long-range development. If we depend entirely on it, we are going to find we may run short of these ores.

You mentioned the fact that there are approximately a thousand people, if I remember right, employed in research in this country.

Mr. ROSE. Yes. A survey made a year ago by the Bureau of Mines and the Bituminous Coal Research was able to find something less than a thousand.

Mr. DAWSON. As compared with approximately 2,500 in free Europe?

Mr. ROSE. Those were just the laboratories I personally visited. I did not see them all. I asked over there how many were engaged in coal research, and in Germany, for example, they could not tell me.

Mr. DAWSON. Are you able to get papers on what they are discovering?

Mr. ROSE. Yes; we have a excellent exchange of information. We have it on a voluntary basis. Our staff are personally acquainted, and have been in most cases for many years, with research directors and assistant directors and department heads in most of these European research laboratories—in fact, throughout the world, in India, South Africa—and we exchange, as a regular part of our activity, publications, reprints, and so on.

Mr. DAWSON. So we are getting the advantage of the research they are doing?

Mr. ROSE. Yes, sir. The main problem is to find time to study these, and particularly those in foreign languages, of course. We do not have enough manpower in our organization to take full advantage of all of that.

Mr. DAWSON. However, I assume if they do make certain discoveries over there they will secure patents, and we will eventually have to pay for the use of foreign patents to get advantage of their developments?

Mr. ROSE. If they take out patents in the United States, that would be the case, sir. And that is true in certain instances. Excellent work has been done on coal preparation, let us say, in Holland, where they are doing outstanding work.

Mr. DAWSON. My final question: Do we at the present time have any coordination among the various research organizations in the bituminous and anthracite coalfields?

Mr. ROSE. In the United States?

Mr. DAWSON. Yes.

Mr. ROSE. No; I do not think we can say that. The directors of these research laboratories are personally acquainted. We have known each other for a great many years. We work on a very friendly and informal basis and an effective basis. On a practical personal basis, I would say we get excellent cooperation, but there is no formal

setup, no formal clearinghouse. We get it through our meetings, for example; various engineering societies and chemical societies have meetings at which the research and progress in those particular fields is presented and discussed. So there is an exchange of information; an informal clearinghouse.

Mr. DAWSON. But would it be advisable to have the Federal Government or some other organization try to get these various research groups together to see if they could agree on someone to general direction to see there was not duplication of effort?

Mr. ROSE. That is a question that would take some study. I feel sure that all of these organizations, certainly all of the public and semipublic organizations, welcome exchange of information. When organizations are spending their own funds, naturally they prefer to have that expense handled under their own administrative staff and their own board of directors.

I think that we will find that the coal-research organizations in the United States are quite well informed as to what other groups are doing, not only because of publications but because representatives attend meetings and hear papers on the work in progress. There would be some exception in the case of industrial companies or manufacturers doing work which is kept confidential in the development stages.

I would have to consider that further to know whether there is a need.

I agree with the point that has been made before this subcommittee in the past, that if there is a greatly enlarged program of coal research, with added Government funds in it, that some sort of an organization, a commission or whatever is appropriate, should be set up to handle the matter of evaluation. You cannot get busy men to get together 1 day in 3 months and pick the right research program. It is not a part-time or spare-time job. If it is a question of administering a greatly increased research program and distributing where it would be done most effectively, then you would certainly need an appropriate full-time staff in doing that to make sure the money was spent wisely and effectively.

We are presently getting along quite well because of the excellent personal relations between these groups, between these physicists, chemists, and researchers on all phases of the utilization.

Mr. DAWSON. That is all.

Mr. SAYLOR. Judge Chenoweth.

Mr. CHENOWETH. You have presented a very optimistic picture to this committee today. If I were a coal operator, I would feel very encouraged. In fact, you almost induce me to go out and buy stocks in some of those coal companies.

Mr. ROSE. The potentials are there.

Mr. CHENOWETH. How far away are we from this utopia that you presented here?

Mr. ROSE. There is a sentence or two in the hearing that the potentials are there, and they are excellent to make these things a reality. It takes the time and effort, it takes the money and the talent of a great many people, all the way from universities and Government agencies down to, finally, equipment manufacturers.

Mr. CHENOWETH. Bituminous has been a sick industry; has it not?

Mr. ROSE. It has gone through some very lean years; yes, sir.

Mr. CHENOWETH. As a doctor, you indicate that this patient is going to come back more vigorous and stronger than ever. Would you say that is a fair inference from what you have told us this morning?

Mr. ROSE. I definitely expect the volume of bituminous coal production to increase for some years to come. As to the degree of increase, what extent we take advantage of the potential that is there would depend a great deal on the research and development and market effort that is made. With no more than the present amount, I think we can expect some substantial increase in coal, but the potential cannot be reached unless we do the research and development work and the application of results.

Mr. CHENOWETH. I believe bituminous sales increased about 15 percent last year over the year before. Is that right?

Mr. ROSE. I think about 30 million tons.

Mr. CHENOWETH. Is that due in part to the research program or due just to a normal increase in the demand for bituminous coal?

Mr. ROSE. I think a considerable part of the increase is increased industrial activity. The electric utilities alone, for example, are burning more coal.

Mr. CHENOWETH. What has brought that about? I was interested in your statement on utilities.

Mr. ROSE. It is the greatly increased demand for electricity for power and household uses, all uses.

For example, take air conditioning. It used to be that the utilities had a very high peak load in winter and, of course, lots of lighting and heating was used, and summer was the low area. A couple of summers ago—recently the summer load, the air conditioning period, has been higher than any previous electric load in history. You may have that, say, in August, but by the time next December comes you have gone clear beyond that, because the demand for electricity is constantly increasing. All the estimates made over the past generation on the growth of electric power demands have been too conservative. Nobody has been able to estimate the real demands for electric.

Mr. CHENOWETH. I was very much interested in your statement about your visit to the experimental plants in Europe, and particularly in Germany. I have always had the impression that Germans were far ahead of us in the uses of coal and the development of by-products. Did you gain that impression from your visit there?

Mr. ROSE. Yes, to a certain extent. I will put it this way: In Germany the resources of the country are not nearly as great as they are in the United States. Germany, for example, has considerable coal; they do not have a great deal else in the way of fuel; and they have to make the most of it. In this country, with our liberal resources of petroleum and gas, the effort has been divided, but in Germany they have had to make this tremendous industrial growth on coal. The coal industry occupies a very important position there, and from necessity they have been able to do a great many things and have done them sooner than they were done in the United States. I do not think it is because they have better research people or greater ability. They have the greater need to solve these problems sooner than we do.

Mr. CHENOWETH. What about the production of synthetic liquid fuels from coal in Germany?

Mr. ROSE. There were a number of those plants during the wartime period, as you have heard from previous testimony. I was personally

in some of them in 1945. I was over as a Government observer to enter plants and collect information. Those plants are not operating in Germany now. In the first place, at the end of the war the Allied Commission, as a security measure, ordered them stopped. These plants were severely bombed and were mostly bombed out. Then the Allied Commission required that type of activity in Germany to cease. Just like they could not operate airplanes, you know. And the economics in Germany as compared with imported oil are such that it has not been particularly attractive in Germany in peacetime to produce liquid fuels from coal. There is some work being done to produce chemicals. As far as I know, in western Europe there is no coal being processed for liquid fuels at the present time.

Mr. CHENOWETH. What was the comparative cost when they did produce it?

Mr. ROSE. You mean in wartime?

Mr. CHENOWETH. Yes.

Mr. ROSE. It was based on military necessity.

Mr. CHENOWETH. Did you ever get those costs?

Mr. ROSE. There are costs on record, but under a wartime economy, with slave labor and so on, the correlation of those costs with American costs is very difficult.

Mr. CHENOWETH. If we had the German know-how in this country, could we be producing synthetic liquid fuels from coal today on a commercial basis?

Mr. ROSE. I think we do have.

Mr. CHENOWETH. In competition with the oil market?

Mr. ROSE. I do not think so at the present time. I reviewed the printed testimony of the committee last night in my room, and from the testimony there by people who are well informed there is no present indication, to my knowledge, that with our know-how today and with the present level of petroleum prices and supply, that you can produce liquid fuels from coal, that is, gasoline from coal competitively.

Mr. CHENOWETH. You mentioned that as one of the possibilities.

Mr. ROSE. It is a long-range potential; yes. As the supply of petroleum and natural gas decrease and prices go up. As an example, there have been several sharp increases in petroleum prices during the last few months. Whether they will stay there I do not know. Congress is looking into it right now.

Mr. CHENOWETH. You see no immediate possibility for liquid fuel development then?

Mr. ROSE. It is a matter of years.

Mr. CHENOWETH. I see.

Mr. ROSE. However, as brought out in previous testimony, to be ready to produce this and produce it under reasonable costs will take many years of research.

We have the German know-how now that was seized in Germany. I was among many who went in the plants and got this information, actually physically removed reports.

Mr. CHENOWETH. You say Germany is prevented from using these plants now?

Mr. ROSE. At the end of the war, for a period of several years they were prevented from producing gasoline.

Mr. CHENOWETH. Why was that?

Mr. ROSE. Security. In other words, they were the defeated enemy, and also they were not allowed to fly their own airlines, and so on.

Mr. CHENOWETH. Does that situation prevail today?

Mr. ROSE. No; I think much of that no longer exists. I do not know the details, but I think most of those restrictions have been removed.

Mr. CHENOWETH. In other words, you mean it was to our advantage to use an airlift to take gasoline into Germany when they could have been producing it in Germany themselves. Is that the method of economy that we are following over in that country?

Mr. ROSE. They did not anticipate that problem. But when the Allied Governments went in a defeated enemy county, naturally that country was required to stop certain things that had been tied in with military efforts, production of armaments, production of military planes, and synthetic fuels, which for the Germans had been military fuel. In sort of a blanket way, many of those things were restricted for a period of several years. They have been gradually relaxed one at a time. So I think most of them have disappeared.

Mr. CHENOWETH. You did not find any synthetic liquid fuel plants on this trip?

Mr. ROSE. I did not go in any. I understand there is at least one making chemicals, but I was told there were none making synthetic liquid fuels.

Mr. CHENOWETH. Because it is not practical to do it?

Mr. ROSE. They were not able to compete with imported gasoline.

Mr. CHENOWETH. I see. I think that is all.

Mr. DAWSON. Did you happen to read the testimony before our committee earlier this year, Dr. Rose, by the shale oil people who were asking for some depletion allowance for their industry?

Mr. ROSE. I did not read that particular hearing. However, I am acquainted with the shale oil situation. I have been out at Rifle a couple of times. I was on an advisory committee that visited there, and I see the technical reports. But I have not seen that particular testimony.

Mr. DAWSON. I can tell you—and it may be of interest to you—that the president of Union Oil Co. was one of the witnesses, and he testified that they could produce gasoline from shale rock now to compete commercially with regular gasoline, regular oil companies, providing they had the 27½ percent depletion allowance that is given to the oil companies. They have opened this past month their new pilot plant in western Colorado for production of gasoline and oil from shale rock. That plant has now been opened.

Mr. ROSE. Good.

Mr. DAWSON. If they get the depletion allowance, they claim they can compete, and they have an inexhaustible supply of shale rock in the Colorado plateau area, enough to supply us for over 300 years of our foreseeable needs in oil.

Mr. ROSE. Yes; I understand that.

Mr. DAWSON. It is a very interesting development.

Mr. ROSE. I have understood for some time that the production of gasoline from oil shale was approaching a competitive situation. I have been through that area several times and have been all through the Bureau's retorting plant there.

You also mentioned reserves of uranium. On my personal vacations I have made it a point to get down to the Colorado plateau. I have been in Moab, in the Laguna area, New Mexico. So just on the side I have tried to keep track in a general way with developments in the uranium field. In research direction you have to know a little bit about most everything.

Mr. SAYLOR. Dr. Rose, just one more question. Do you know how these four European countries are financing their coal research program?

Mr. ROSE. Yes. In England the coal industry was nationalized about 10 years ago. The huge coal research laboratories there—and I visited three of them in different parts of the country—are supported by grants made from the resources of the coal producers. I will not say the earnings, because the record of the British coal industry has not been too happy on earnings. But they are paid for from the funds of the national coal board. They have one laboratory which is on physical research, that is, basic research on production of coal; another one on research on the full-scale testing and developing of mining equipment; and the third one is on the utilization of coal, the particular emphasis at present being on smoke problems.

In France, again the mines there have been nationalized. Their board of directors appropriate from their funds from time to time the amounts of money necessary to keep their research program going. The last time I made the calculation, trying to make an allowance for the difference between French francs and United States dollars, it was in the order of 5 or 6 cents per ton. In other words, for every ton of coal mined in France something like 5 or 6 cents of our money equivalent goes into research and development.

In Germany I visited several research organizations. One of them was an association of coal operators, whose board of directors, again, appropriate from quarter to quarter the amount of money necessary to support their work.

In Holland, which has a particularly long and very successful record of coal research—I will just mention these figures. In Holland the production of bituminous coal is in the order of 11 or 12 million tons a year. About 7 millions tons of that is operated by the Dutch State Mines. It is business-managed, and the connection with the government is rather normal, because it is actually business-management. These Dutch State Mines produce 7 million tons of coal a year and employ about 1,200 people in their research and engineering organization. In other words, 1 company producing 7 million tons of coal employs considerably more people than everybody in the United States form all sorts of coal research, and their record of accomplishment is truly outstanding, the discoveries and the inventions they have made. They have taken out patents and their processes are being licensed throughout the world and being used in this country.

I saw other things in preparation. I asked them why so much research, and they said, "We get our money's worth." The Dutch businessman is a hard-headed businessman, and will not do that unless he is getting his money's worth. So that is just an example.

So that some of these funds, I would say in general they come from what is in fact the operating organizations and the government. They work very closely together.

In England, for example, the Government stimulates and sponsors and helps to finance industrial research by putting anywhere from 25 to 50 percent, and sometimes more, to get a thing started in any type of research. So that it is a little hard to find an exact equivalent in this country, although I have taken the pains in some cases to get the whole organization setup and to untangle these many skeins.

They believe in cooperation and exchange of information, not usually on an official, binding basis, but nevertheless on an organized basis, where they have representation on committees that meet and plan and advise other groups. It works out in a practical way.

In the final analysis, of course, the money comes from two sources: from the government and from the coal producers.

Mr. CHENOWETH. May I ask one more question, Mr. Chairman?

Mr. SAYLOR. Mr. Chenoweth.

Mr. CHENOWETH. Do you feel, Dr. Rose, that the experimental work in Europe is further advanced than it is here? Do you feel they are finding new uses for coal that we have not yet thought about here?

Mr. ROSE. It is a pretty general question, with so much work going on. They have fine research people, they have splendid equipment. They are buying the best research instruments from all over the world. You go into a laboratory and you will find a $12,000 instrument here [indicating], which was built in France, a $15,000 instrument here [indicating] from Sweden, another from California. In other words, they are buying and using the finest and best equipment that can be found in the world.

Mr. CHENOWETH. Are we doing that here?

Mr. ROSE. Not to as large an extent.

Mr. CHENOWETH. Why not?

Mr. ROSE. It is a matter of funds.

Mr. CHENOWETH. If your organization, say, could have additional funds you could do this same work?

Mr. ROSE. Surely, the Bureau or other organizations. It is a question of money to do this and, of course, staff. As everywhere in the world, a highly skilled staff would have to be developed. We would have to take people with college training and develop them.

Mr. CHENOWETH. Suppose you had an additional million dollars a year right now. Could you put it to good use in experimental work?

Mr. ROSE. Yes; we could in a fairly short time. I would not want to start spending money at that rate next month because you would have to have the ability and have to have the staff.

Mr. CHENOWETH. It is not all a matter of money then?

Mr. ROSE. No; you would have to have the staff. A great deal of interest in our organization is in developing people, something like the cadre system in the Army, whereby you train people who can develop into department heads and so on. We have been quite successful with it.

Mr. DAWSON. It is quite possible that if you analyze it and track it down where this money came from, you would find that we are giving that money to the people in Europe and they are doing it on our money, and we might just as well spend it in this country and do it ourselves.

Mr. ROSE. It occurred to me when I was over there, but I did not embarrass them.

There is one thing I might mention and clarify my own mind on this.

I have worked up several charts and material I might hand to you,

and later if you and the chairman and members of the committee think it would be helpful, I can supply additional copies.

For example, here is a chart showing, in our humble opinion, the function that universities, Government agencies, associations, research institutes, equipment manufacturers, coal companies, and large coal users have in this research problem, how they fit together, the most important part they play in the various stages in research. I think that may be of help to clarify your ideas. I will turn over one copy now, and if you find they will be helpful, I can supply more copies.

Mr. SAYLOR. Mr. Chairman, I would move that we put in the appendix to the record this chart, or in the record following his statement.

Mr. ROSE. I am not offering it as part of my testimony. I thank the committee for the privilege of appearing before them and discussing the subject.

Mr. EDMONDSON. Thank you very much, Doctor.

Mr. SAYLOR. Without objection, the table located at page 4 of the June 29, 1956, memorandum will be made a part of the record.

(The chart referred to follows:)

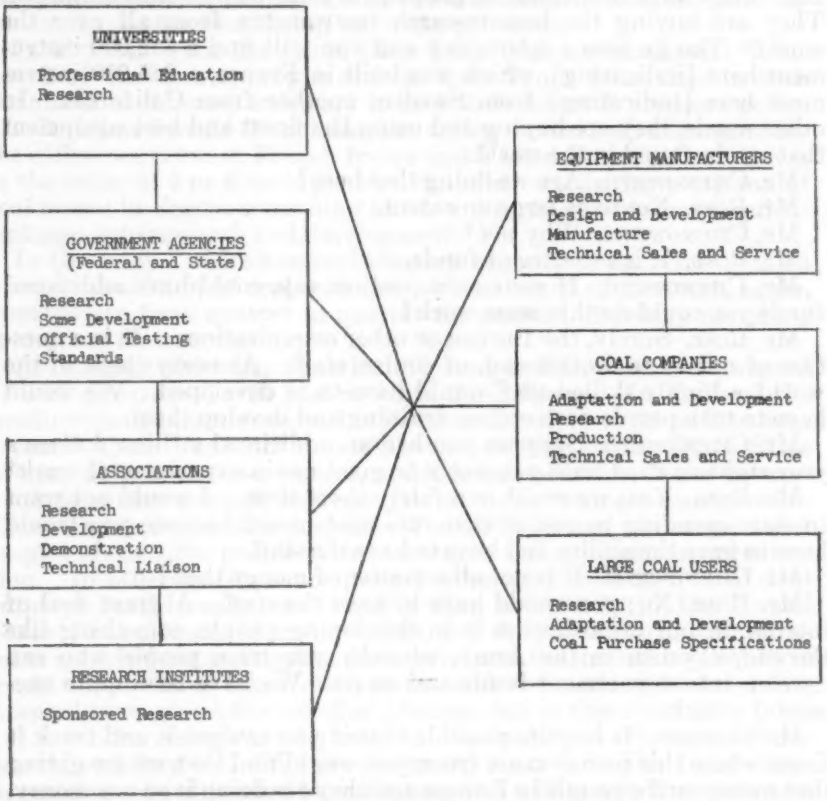

FIGURE 2. Types of organizations for research and related activities to solve coal-industry problems and to expand markets. (NOTE.—There is a flow of information in both directions between all groups.)

Mr. SAYLOR. If there is anybody in the room who desires to testify and who has not come forward and given us your name, will you please do so as soon as we adjourn?

The committee will stand adjourned until 1:15.

(Whereupon, at 12 noon, the subcommittee recessed to reconvene at 1:15 p. m. this same day.)

AFTERNOON SESSION

Mr. SAYLOR. The meeting will come to order.

The next witness we have is Mr. J. D. A. Morrow, the former president of the Joy Manufacturing Co.

Mr. Morrow, I understand as of the 15th of last month you have joined that group of gentlemen who are now on a consulting capacity. However, knowing your interest in the manufacture of machinery used in the mining field, I know you will be busier now than you were when president of a company.

Mr. MORROW. Except I will not be a human shock absorber any more.

Mr. SAYLOR. Mr. Morrow, you have a prepared statement. Is that correct?

STATEMENT OF J. D. A. MORROW, REPRESENTING THE AMERICAN MINING CONGRESS, WASHINGTON, D. C.

Mr. MORROW. Yes, sir. That statement has been presented to the committee. The only change I might like to make is in the first line, in which I said I was chairman of the board, and I was last year, but now formerly chairman of the board of Joy Manufacturing Co.

In order to save time, if agreeable to the committee, I will not read this entire statement but will refer to it occasionally and make some additions.

First of all, I would like to compliment the United States Bureau of Mines and Bituminous Coal Research for the splendid job they have done in outlining the field of possible very valuable research that might well be conducted in this industry. It is an able study, one that is very stimulating when you read it over, gives you some idea of what might be accomplished with such research.

The only part of the program to which I wish to remark is that which applies to mining machinery.

In counterdistinction to what Dr. Rose told you this morning about research, in which he stated that we are behind Western Europe in research, we are ahead of Western Europe and all of the rest of the world when it comes to the design and manufacture of mining equipment in the United States. That fact is pretty well recognized, because there are visiting mine operators and mining engineers and government officials that come to this country from all over the world. They are even anxious to come here from behind the Iron Curtain, satellite countries and Russia itself. Some of them have been here. Frankly, I am not too enthusiastic about that myself. But from all of the rest of the world that is true.

Joy machinery of one sort or another for mining is manufactured in the United States and Canada, in Scotland, England, France, Germany, Sweden, Italy, Spain, South Africa, and Australia. Not all the entire line of Joy equipment is made in all of those countries, but machines that are peculiarly adaptable to their conditions are made there. Other Joy machines are made in those countries that are modifications of the types we use in this country, having been changed to make them more useful under the mining conditions met in those countries.

I want to make a distinction between basic research and applied research here. I do not wish to give the impression at any time that manufacturers of mining equipment are against—I am speaking here in behalf of the manufacturers' division of the American Mining Congress, which division has some 200 member companies that manufacture mining equipment. There are branches of the Government that can very advantageously carry on basic research. For example, the United States Bureau of Mines does research work of that type now, and some of the information and facts, discoveries that are made, are quite helpful in the design of mining equipment, not only to make it more efficient but to make it safer. It would be helpful to the manufacturers of mining equipment to have more research of that kind carried on by the Bureau of Mines. For example, data with respect to the thickness of coal seams in different areas of the country and the characteristics of those seams, whether they are regular or irregular, whether they have faulting, rock, or shale dirt or other extraneous material in the seams, whether they have iron pyrite inclusions. Information of that kind is helpful.

When you are considering the design of a new machine one of the first questions always asked is, How many of them will you sell? That goes back to where are you going to use it.

Well, this machine is designed to be 48 inches in height. How many mines mine coal from seams that are 48 inches in height? If you are talking about a machine that is 36 inches in height, your market is still smaller. If you go down to 25 inches, it is still smaller. How many will you be able to sell? You do not want to build a machine and spend a million dollars developing it and find you have no place to sell it.

So information of that kind that is available to the manufacturers of mining equipment can be quite useful.

When it comes to applied research, that is, where you translate the basic engineering or scientific information you have acquired into a workable machine, we wish to advise the committee that we think that is a field that it will not be profitable for the Government to undertake.

The reasons for it are thoroughly practical and rather simple. The design of mining equipment is a special job. Mining machinery has to be designed to work under very strict dimensional limitations. The coal seam is only so high. You cannot jack the mountain up to get more room for the machine to work; the machine has to go inside those limitations of height. The width that you can drive for rooms in the coal seam likewise will be limited. Your machine cannot be too wide. It has to turn corners of 90°. Say you have a lot of severe, strict limitation.

The machine works under peculiarly difficult conditions. It will be subject to falling rock, to acid mine water, dirt, sand, and all sorts of material of that kind that gets into your chains and your gears, if it is possible for it to get in. So that these machines have to be designed to work under conditions that are entirely different than equipment that works on the surface in a factory or something like that.

The only place you find the body of experience that is necessary in designing equipment of that kind is in the engineering and sales departments of these mining machinery manufacturers. They have been at it for years and years and years. They have accumulated the experience and the date that limits them to design equipment that will work day after day with a minimum of lost time and breakdowns and with the minimum of maintenance. And that is essential because, as mines are mechanized, the men in the mines are all paid by the hour, and you cannot afford to have machines idle. And the productivity of these machines now has gone up so that if 2 or 3 continuous miners in a mine are out of commission you have lost maybe half the entire output of the mine, but your overheads go on.

So these machines have to be designed to run and keep on running as nearly as possible to build them that way.

Furthermore, if a research agency of the Government undertook to design such machines, they might very well, after they had the machine designed, find that they were infringing patents already taken out and possessed by some of these mining machinery manufacturers.

There is a case of that sort mentioned in here [indicating] that happened a few years ago, in which a machine was designed that was an extensible belt conveyor to use behind a continuous mining machine. When it was completed and tried out we invited those people to come up and see what we had, Joy, and we showed them the model of the identical conveyor that they had designed and built, which we had obsoleted 5 years before. But we had all the patent coverage on it. It was just not good enough, and we were then in a process of developing a far better one, which is the extensible belt conveyor we now use.

That is an example of what you would get into when you undertake to invade this dark jungle of experience and of patents and patent applications which the person on the outside does not know anything about.

Those of us in the business are pretty familiar with what is going on. Still we take that risk when we design a new machine, because it may turn out that one of our competitors has done the same thing ahead of us and we have wasted our money. But that is just one of the hazards of a business. We are in far better position to avoid waste research and experimental time and money in failures of that kind than a governmental agency would be which would not have the source of information we have.

One other respect in which the Government might be helpful to the mining machinery manufacturer is having better statistical information provided for us by the United States Census Bureau. I believe, Mr. Chairman, you have already received a letter from the American Mining Congress on this very subject. I have seen that letter. I just want to say, as a representative of the mining machinery manufacturers, we endorse that request embraced in that letter most thoroughly.

The Census Bureau possesses the information; they simply do not tabulate or publish it, segregating mining machinery from construction and other types of equipment. Whenever we have had emergencies in this country—and we have had in both of the last wars—it was necessary to step up manufacturer of mining machinery quickly, and we had to assist that stepup by proper priorities, and the difficulty of identifying the recipient of such priorities was apparent right away.

What kind of machines? How much? What is the requirement for steel, copper, aluminum, rubber, everything else? The information all had to be dug up originally. It cost a lot of money; it wasted a lot of time. We might just as well have that information provided currently from the data already in the hands of the Census Bureau if somebody will just—well, it takes more than persuasion. Just get them to publish it. That is all. It is down there. Just get them to run it through the machines and bring it out separately. Don't mix it up with construction machinery.

It is safe to say that the annual value of mining machinery manufactured in this country is greater than the value of oil-drilling equipment made in this country. That is shown separately but not the mining machinery.

So I would like the record to show that we are very much in favor of this request embodied in that letter.

Now, Mr. Chairman, I think that pretty well covers what I have to say here that has been embodied in what I mentioned. If there are any questions the committee would like to ask, I will answer them as best I can.

(The prepared statement submitted by Mr. Morrow follows:)

STATEMENT OF J. D. A. MORROW

QUALIFICATION

My name is J. D. A. Morrow, formerly chairman of the board of Joy Manufacturing Co., Pittsburgh, Pa. Joy manufactures coal mining and other mining machinery, as well as products for the aircraft, construction, and manufacturing industries, both in the United States and through wholly owned subsidiaries and licensees in Canada, Great Britain, France, Germany, Sweden, Spain, South Africa, and Australia. From September 1, 1940, to January 12, 1956, I was president of Joy. From January 1, 1927, to September 1, 1940, I was president of Pittsburgh Coal Co. Thus, I have had experience both in the manufacture of coal-mining machinery and in its use in the production of coal.

I appear here on behalf of the manufacturers division of the American Mining Congress, Ring Building, Washington, D. C. This division is made up of some 200 American manufacturers of machines and equipment for use in mining coal, metals, and nonmetallics. A list of the members of this division, of which Joy is one, is attached to this statement.

INTRODUCTION

First, we wish to compliment the Department of the Interior, the Bureau of Mines, and Bituminous Coal Research, Inc., for the fine public service they have rendered in preparing and publishing Information Circular 7754, entitled "Outlook and Research Possibilities for Bituminous Coal." It presents a broad and well-organized study of an important phase of a great and vital national problem.

The authors do not advocate research by any particular body or organization. In fact, on this point the circular says, "No suggestion was made as to whether industry, universities, or State or Federal organizations would be best equipped to work on a given problem." It is primarily to this question of how and by whom such research can best be carried on that the manufacturers division wishes to present its views to your committee.

1. Basic research

There are two broad classifications of research, though to some extent they overlap. These are basic and applied research. Basic research is well described by its name. It is directed to the discovery of new facts and relationships in the world, as in chemistry, physics, mathematics, astronomy, geology, metallurgy, etc. Sometimes its results are negative and disappointing. But negative data are frequently valuable also. For basic research is interested in the facts and discoveries for their own sake, not what can be done with them. Thus, a disappointing result may suggest a different and successful approach.

Applied research has the task of utilizing the new facts and discoveries to create new products of all sorts for the enrichment of human life on this globe—or possibly for its utter destruction. I understand that Russian research chemists years ago made the basic discoveries that made possible the catalytic processes in petroleum refining. They, themselves, were not interested in applying those discoveries practically and no one else in Russia, even as late as 1940, could build a refinery to utilize them. American oilmen by applied research put those discoveries to work in the superior oil refineries that we have today.

Circular 7754 suggests projects that involve both basic and applied research. The United States is losing its leadership in scientific and engineering research to Soviet Russia. (See attached address, Engineering, Scientific and Industrial Development in the U. S. S. R.) Mere self-preservation, therefore, demands that we as a people, and particularly our Government, our industrial and educational institutions, make every effort to maintain this vital leadership. It is against that ominous background that Circular 7754 appears and will be considered.

There is not time to build and staff extensive new research facilities. We must make the best possible use of the facilities and of the research personnel we now have. For that reason, therefore, we maintain that in basic research the Federal and the interested State governments should conform their efforts conscientiously and realistically to that objective. If Federal and State funds are appropriated for basic research, we urge that those funds go to universities, engineering and scientific schools, and to research institutions now in position to make quickly the most effective use of such money. We would respectfully suggest that for such a program Congress enlist the advice and help of such outstanding organizations as the National Science Foundation, the Scientific Manpower Commission, the National Research Council, and the Council for Financial Aid to Education.

Included among presently effective research agencies are doubtless some of the State and Federal organizations. For example, the Bureau of Mines has done and can do basic research helpful to mining machinery manufacturers. Thus, the work of the Bureau on gas and dust explosions in coal mining have been most beneficial. In table 9, page 14, of circular 7754, data are presented respecting the tonnages of coal mined from seams of different heights. This information, if further supplemented by estimates of the remaining tonnages available for extraction in seams of different thicknesses, by data as to the physical and geological characteristics of the different coal seams—such as the type of roof, of floor, of regularity or irregularity of the bed, the presence and location in the seam of rock layers and pyrite inclusions, the incidence of methane gas, the extent of faulting, if any, etc.—would be basic and valuable to mining machinery manufacturers in their applied research in designing coal mining machines and in estimating their potential market.

Outside the better utilization of governmental agencies, such as the Bureau of Mines, that are especially fitted for such basic research in their limited fields, we are opposed to the extension of governmental activities in this field. Government should not undertake to duplicate the facilities and draw off the expert research people from our universities, engineering and scientific schools, and from our private research institutions, but should implement the basic research suggested in circular 7754, if you so decide, through these presently established institutions. Government should strengthen them by its assistance and not weaken them by its competition. Such a program would be consistent with the necessity to build up and expand our basic research on a national scale as effectively and as rapidly as possible.

2. Applied research in the development of mining machinery should be left to the manufacturers of such equipment

The manufacturers division of the American Mining Congress believes that it is in the national interest for applied research in the development of mining

machinery to be left to the manufacturers of such equipment. We understand that the United States Bureau of Mines is in full accord with this view.

The manufacturers of mining equipment are now engaged in such research. They have engineering research organizations expert in such work. They say to you that expenditure of public funds in governmental applied research for the manufacture of such machines, first, would be impractical and, second, is unnecessary.

(*a*) Coal mining equipment is highly specialized and presents unusual and difficult problems of design and construction.

(1) Coal mining machines must be designed and built to comply with the safety requirements of the United States Bureau of Mines and of the mining laws and regulations of all the different States in which coal is mined. Electric motors, switchgear, and power transmission cables and wiring must be made and installed according to the rigid specifications of these agencies. This is to make certain that no part of the electrical equipment will set off a gas or dust explosion while operating in a coal mine. It must meet other standards for the safety of the operating crews that are established by the manufacturers themselves. It is a gratifying fact that as American coal mines have been mechanized, the accident rate in that industry has steadily declined until today it is but a fraction of what it was some years ago.

(2) These machines must be designed and built subject to the rigid dimensional limitations imposed by the thickness of the coal seam in which they will work. It is not practical to jack up the mountain over a coal seam to get additional headroom. Table 9 of the Bureau of Mines Information Circular 7754 reports that nearly one-third of our coal is mined from beds 48 inches and less in thickness.

Let me indicate further the severity of this height restriction on machine design. Between the top of the machine and the rock strata overlying the coal, or the roof, as we call it, there must be at least 5 to 6 inches of clearance to make room for timbering that may be necessary to support the overlying rock and to allow for some variances in seam thickness. Then, there must be 4 to 6 inches of ground clearance betfeen the body of the machine and the floor of the mine to compensate for irregularities of the bottom.

We manufacturers build many coal mining machines that are 26 inches or less in height from the mine floor to the highest point on the machine. This means that within the body of the machine itself, we have only about 20 inches of vertical height within which we must squeeze all the components of that machine.

We are also limited as to the length and the width of the machines. They must travel and operate within the lateral confines of the mine working places with safe clearances on both sides. They must travel and operate around 90° corners. Working places in most coal mines are necessarily rather narrow. The character of one coal bed and of the rock strata that enclose it limit working places to widths of 12 to 15 feet or even less; while in another seam, wider places may be practical. Our mining machines must be able to operate in both the narrow and the wide working places. Moreover, the components of these machines—the motors, controllers, transmissions, etc.—must be so fitted into the framework that they are readily accessible and can be removed and at least temporarily repaired, when necessary, right up in the working mine area itself.

Thus, severe limitations of space create special difficulties and unusual problems in the design and construction of coal mining machinery.

(3) Coal mining equipment must be built for exceptionally rough and rugged service. These machines must withstand heavy falls of coal and rock. Continuous mining machines must be built to rip coal and rock out of solid beds. Conveying and haulage equipment must handle coal, iron pyrite inclusions, and other hard abrasive impurities. The machines must work in dust, mud, and acid mine water and must be mobile and flexible in spite of the dimensional limitations imposed. The largest and most productive continuous coal miners are alloy steel giants that approximate 40 tons in weight and use over 200 continuous horsepower.

(*b*) Consequently, in the design of equipment to mine coal today, a background of sound, broad experience is necessary if an engineer is to design effective and reliable machines. Only in the engineering and sales departments of the companies manufacturing such equipment do you find such experience.

(*c*) A Government group doing applied research on the development of new coal mining machines would be working blind. They would need to know what new machines the manufacturers are now designing and what patent applications

are filed or in the process of being filed on new mining inventions. None of us would willingly reveal such confidential information. Thus, the Government research group might duplicate the development of a present manufacturer already protected by patents.

These are not theoretic hazards. A few years ago, Bituminous Coal Research, Inc., spent substantial sums developing an extensible conveyor to improve the underground hauling of coal away from the continuous mining machines. Then, they discovered that Joy had not only perfected such a conveyor 5 years earlier and covered it with patents, but had scrapped it because our engineers had come up with a far superior extensible conveyor—the one that we are now selling all over the world. Thus, the BCR development not only infringed Joy patents, but was obsolete before it was finished.

To design, test, change, test again, modify, improve, and finally complete the development of a major coal mining machine today may cost as much as a million dollars. It is folly for anyone to undertake such a project without a sound basis of successful experience in designing and building such equipment. We cannot impress too strongly upon you gentlemen the necessity for such experience, which takes years to acquire.

(*d*) Qualified and competent engineers are not available for such Government research and development. Manufacturers today are short of such engineers and are resorting to every expedient to increase their engineering departments and are having great difficulty in doing so. They can and would offer far more in the way of compensation and future prospects to such engineers than any Government agency can do.

For these reasons, it is our conviction that a governmental program of applied research developing coal mining machinery is not practical and would be a waste of funds that could better be devoted to other research.

3. We think governmental applied research to design and develop new coal mining machinery is unnecessary

(*a*) If there is an opinion in official circles to the contrary, we feel that it proceeds from lack of knowledge of what the manufacturers of coal mining machinery themselves have accomplished in the last few years by their own applied research and can be expected to accomplish in the immediate future.

Table 1 of the Bureau of Mines Information Circular 7754 indicates that a total of about $3 million was expended in research and development of mining and mining equipment. We are convinced that this figure understates the actual amount spent. The Joy Manufacturing Co., itself, has appropriated this year approximately $2 million for such research and development. Certainly, the other manufacturers combined are spending more than our single company. Further, these research and development expenditures have been increasing year after year.

The Joy Manufacturing Co. has built its own experimental coal mine. It includes a machine shop and building equipped as a center for both basic and applied research for the development of coal mining machinery. That mine does not sell a single ton of coal. Its exclusive purpose is the testing, changing, redesigning, and developing of better and better coal-mining equipment. A bulletin briefly picturing our experimental coal mine is attached hereto.

In mechanized mining today, many mine operators mine the entire coal seam—coal, rock, iron pyrite inclusions, clay veins, and all—and, then, outside the mine, mechanically separate the coal from the impurities. This "full seam" mining produces lower costs in many instances than does "selective mining," i. e., trying to mine the coal underground separately from the impurities in the seam.

Since our machines must be designed and built to do "full seam mining" where desired, we opened our experimental mine in a coal seam consisting of alternating layers of coal and rock—some of the rock strata running from 1 inch to 12 inches in thickness. Machines developed in that mine are, therefore, tested to mine coal, "full seam," under most exacting conditions.

In addition to doing much research work ourselves, however, we also practice what we are advocating here. From time to time, we employ regular research establishments to carry on research projects for us, such as Pennsylvania State College, Armour Institute, M. I. T., Case, Brooklyn Polytechnic, and others.

Other manufacturers, although they do not operate experimental mines of their own, enlist the assistance of customers and other research facilities in developing machines that are adequate for their tasks.

(*b*) Much more convincing than these statements, however, are the results obtained with our research and development efforts. On page 15 of the report under the heading, "Productivity," it is stated that coal mining productivity in the United States has increased between 1925 and 1955 from 4.52 to 10 tons per man per shift.

According to the Bureau of Mines, productivity in coal mines in Europe is as follows:

June 1955 output per man per shift, European coal mines [1]

Countries	Metric tons		Short tons	
	Underground	All employees	Underground	All employees
Belgium	1.154	0.829	1.2694	0.09119
France	1.594	1.044	1.7534	1.1484
Saar	1.818	1.157	1.9998	1.2727
West Germany	1.554	1.162	1.7094	1.2782
Netherlands	1.446	.939	1.5906	1.0329
Poland [2]	1.733	(3)	1.9063	
Czechoslovakia [4]	(3)	1.250		1.3750
United Kingdom	1.591	1.230	1.7501	1.3530

[1] T. W. Hunter, Chief, Branch of Bituminous Coal Economic and Statistics, U. S. Bureau of Mines.
[2] 1954.
[3] Not available.
[4] 1951.

The Bureau, therefore, estimates productivity in the United States in 1955 at about 7 to 8 times the European attainment. Parenthetically, we must state, however, that coal mining conditions in those European countries are much more difficult than in the United States.

It may be argued that we should be doing much better than 10 tons. As a matter of fact, we are doing much better. Without meaning to be critical, I must say to you that the figure of 10 tons of output per man per shift in American coal mines is totally misleading as a measure of our productivity or technological progress.

That 10-ton average takes in all kinds of mines—some very old country mines with hand loading, mines with antiquated equipment, mines with more recent machines, and a few equipped with the most modern underground machinery. Mathematically, the 10-ton figure may be accurate; but, such an average is like measuring the height of all the people in the United States—men, women, children, and babies—and coming up with the statement that the average height of the American people is 3 feet, 7 inches.

The true measure of the technological accomplishment in increasing coal mining productivity in the United States must be derived from those mines that are equipped with the newest and most productive machinery, that is, with the new continuous miners with continuous haulage to take the coal away from them. We have personal knowledge of coal mines so equipped that produce 20, 30, 40, 50, and even 60 tons per man per shift, including all men on the payroll—inside, outside, above ground—and not omitting the executives and mine clerks. These are not strip mines but underground mines.

Based on our knowledge of the performance of our own continuous miner customers and assuming equally creditable results from the machines of our competitors, we estimate that in 1955 some 15 million tons of coal were mined in this country with these machines at an average productivity of about 25 tons per shift per employee. Continuous coal mining as an operating method is in its infancy. Continuous miners and accessory equipment are in an early stage of development. We can, confidently, expect fairly rapid improvements in the machines themselves and even more rapid extension of their use in coal mining.

It is historically true that technological progress moves at an ever faster pace in this country. Accordingly, we expect them 10 years from now 60 percent of the American coal produced will be mined with continuous mining machines at a productivity per man per shift far above the rate today.

The simple truth is that the American mining machinery manufacturers have been doing and are doing an extraordinary job of designing and building more and more productive coal mining machinery. Mine operators and mining engi-

neers throughout the world confirm this opinion for they regard the United States as the leader in this field. Coal mine operators in other countries import our machines to improve their productivity. I have personally heard high officials of foreign governments describe American coal-mining machines as "wonderful creations" and "marvelous machines." Other countries endeavor to persuade our American manufacturers to produce these machines in countries overseas.

There is no basis in fact for any opinion that the manufacturers I represent here are not doing a good job. The fine results that are accomplished grow out of their own research activities and expenditures, and there is no need to supplement those activities with Government research aimed at the production of such equipment.

(c) Apparently, there is some impression that these new coal-mining machines have placed the smaller operating companies at an increasing disadvantage in competition with the larger companies. This is erroneous.

Statistics compiled by the McGraw-Hill Publishing Co. for 1954, and secured direct from the operating companies or from the various State mine departments, indicate that of the deep-mine coal produced in that year approximately half was produced by companies whose total output was less than 1 million tons. This includes the mining companies that would generally be classed as the smaller operating units.

Please note the significance of those figures for manufacturers of mining equipment. Half their market for mining machinery is in the mines of the smaller operators. For their own welfare, therefore, these manufacturers must design and build equipment to reach this market, and they do—both as to the types of machines and as to the prices at which the machines are sold.

Furthermore, at least the larger manufacturing companies assist smaller mine operators in financing their purchases. Our own company maintains a wholly owned subsidiary finance company for this express purpose.

We, therefore, desire you to know that the manufacturers of mining equipment in their own best interest serve the smaller mine operators as they serve the larger.

SUMMARY

Summarizing our position generally, the manufacturers division of the American Mining Congress commends the Bureau of Mines and Bituminous Coal Research, Inc., for the study of research needs in bituminous coal. In view of the dependence of our national security on research and the gravity of the situation there confronting the United States and the free world, Information Circular 7754 is a most timely document. To make the best and fastest progress, if you initiate the program suggested, we urge you to provide for basic research through existing research institutions and agencies and not by new governmental research agencies, and to leave applied research on coal-mining equipment to the manufacturers of such machinery who are well equipped for the purpose and have demonstrated their competence to do a good job.

SPECIFIC RESEARCH PROJECTS

On pages 17 and 18 of Circular 7754, a number of specific projects are suggested as subjects for research on mining methods and equipment. I am not in position to know or to advise the committee what research and development is being carried on by other manufacturers on any of these particular projects, but, as an example of what is going on, I can advise the committee of what our company is doing with respect to two of these projects.

Mr. SAYLOR. Thank you for coming here to make this statement, Mr. Morrow. We appreciate your taking time to come up here and give us the benefit of the research which has been done by your company and other companies in the manufacture of mining equipment.

Mr. Edmondson, do you have any questions?

Mr. EDMONDSON. No questions.

Mr. SAYLOR. Mr. Dawson, do you have any questions?

Mr. DAWSON. No questions.

Mr. SAYLOR. Judge Chenoweth?

Mr. CHENOWETH. No; I think not.

Mr. MORROW. I will add one thing that might be of interest here. I do not know what the other mining machinery manufacturers spend in the way of research, engineering, experimentation, and so forth. Our own company maintains an experimental coal mine. They never sell a pound of coal out of that mine. It is operated in a seam of coal that has a lot of rock layers in it; extremely difficult mining conditions. Every machinery make is tested out there, which costs a good deal of money to do, but it enables us to design equipment to meet particular conditions in the mines. Other companies have their methods of doing the same thing.

Our engineering research development expenditures last year were just about $4 million, which is a substantial sum in itself. It will be larger this year. We are very greatly impressed with the necessity of carrying on our engineering research in this country, and our scientific research. We are not doing anywhere near enough of it. There are nowhere near enough capable engineers and scientists now in this country, or being trained, educated, and graduated. We are falling behind our Russian competitors at what is really an alarming rate. Perhaps that is a separate question.

There are two products of recent Joy engineering research I mention here. A year from now we will be marketing a new continuous miner. This will be only 25 inches in height. It will be a high-capacity machine. It will mine coal, if you can roof bolt it and don't have to cross timber, down to a seam 29 inches in thickness. It will mine good deal thicker seams, of course, but we are in a race in this country to get machines that will mine thin coal. That is particularly necessary here in Pennsylvania.

We have known about that market for some time. But you realize that all the equipment, all the machinery that is going into that mine, the motors, the gears, the transmission, everything else is going to be confined within a space only 21 inches in thickness. There is about 4 inches of clearance underneath that machine you have to have between the bottom of the machine and the mine floor; 21 inches in which to pack all of that machinery, and you must do it so, as the boys in the mines says, it will be "getatable." It is a neat job to do it.

I might say this is the first time this low-type continuous mining machine has been mentioned anywhere.

The other I mentioned is a new type of dust collector, or you might call it an air filter, if you want to, and that is the result of basic research that follows up an experimentation of one of the large metal mining companies who had a dust problem.

Joy approached it from an entirely different angle. Our research men said, "Let's find out why certain things happen and why other things do not happen. And what are the physical laws that govern the happening of those events?"

The result is an entirely new type of dust collector from one-twentieth to one-tenth the size of other dust collectors handling comparable volume of air. That dust collector is extremely efficient, also. The most efficient of all dust collectors are the hydrostatic electrical precipitators. They will take out 100 percent of the floating particles in the air 1 micron or larger in diameter. A micron is one five-thousandths of an inch. The hydrostatic electrical precipitator will take out even smaller particles than that. They take a good deal of room. They are big. They have to be. Besides, they use electricity, and that

has some limitations if you have explosive dust or something of that kind, and you have to be careful.

The next most efficient type of dust collector or eliminator, filtration, is the "bag house," and that is exactly what it is. The air is put through a succession of canvas bags, and one after the other they take these particles out, and they do a very good job. But the very description gives you an idea of the size of an installation of that kind. It takes a house to handle the volume of air you have to put through.

This new unit that Joy has is very neat and compact, cylindrical in size and shape, extremely efficient. There is a picture right there [indicating]. You can see what it looks like. You can put it inside the air ducts themselves, taking ventilation air into the plant and taking it out again.

To give you an idea of what it will do, if you will bear with me a moment I will give you a few figures.

A dust collector to handle 6,000 cubic feet of air a minute—it filters the dust particles out of it with an unusual degree of effectiveness—will be 17 inches in diameter, the cylinder. It will be just under 10 feet in length, and that is all there is to it. If you want to handle 48,000 cubic feet of air a minute, the cylinder will be 48 inches in diameter, it will be 17 feet long, and it will do a superb job of taking impurities out of the air.

For example, it will take 100 percent of all the particles out of the air that are 5 microns in size or larger. That is one five-thousandths of an inch. It will take 95 percent of those that are 4 microns, 80 percent of those down to 3 microns. That is getting down pretty fine. When you come down to 1 micron, it will take 60 percent of them out. Below that we cannot measure it because it takes an electromicroscope to find out.

Another comparative statement about this particular filter. Most manufacturers of equipment of this kind tell you what percentage of the weight of dust or floating particles they will take out of the air. They will guarantee they will take out 95 percent. Well, that is a good deal like guaranteeing a farmer that you build a fence around the field in which he is going to have horses and cattle and hogs and sheep and pigs and rabbits, mice, grasshoppers, everything else—you agree it will stop 95 percent of all animal life inside the fence going through it. We do not talk about the weight, we talk about the number of particles. So when I give you these percentages it is the number of particles we are talking about.

Now a dust collector of sizes like this, you will readily recognize, lends itself to the manufacture of portable units. The company is now working on a portable unit designed to go underground to take care of the dust at the mine face itself.

Mr. EDMONDSON. Could I ask you a question about another matter here?

Mr. MORROW. Surely.

Mr. EDMONDSON. I just had an opportunity to briefly examine this Coal Mining Developments in the U. S. S. R., which you were kind enough to include in your statement to the committee.

Mr. MORROW. Yes.

Mr. EDMONDSON. It certainly contains material that I think ought to be mandatory reading for every Member of Congress. But I just wondered if the trend which you developed in this paper back in Octo-

ber 30, 1953, regarding the accelerated rate of development of the Soviet coal industry still holds today in 1957, in your opinion, from your information.

Mr. MORROW. Yes; it does.

Mr. EDMONDSON. You present some information regarding a much more rapid rate of mechanization of their mines than the Western European mines.

Mr. MORROW. That is right.

Mr. EDMONDSON. Do you think that trend still holds?

Mr. MORROW. From all the information we can get that is still proceeding.

Mr. DAWSON. Where do you get your information?

Mr. MORROW. We get a good deal of information from publications of the United Nations. There are various committees that assemble a lot of information of that kind, and it is good information. Then we get information also through our foreign subsidiaries from some unusual sources.

Here, for instance, are photographs of some Russian mining machines. Those photographs are taken from a report that was made by a committee of Scottish miners who were Communists who were invited to visit the Russian coal mines. They made a report when they came back. One of my friends in England got hold of it long enough to photostat part of it for me, and there they are.

That one, you will see, is a copy of a Joy loading machine that they use in their mines.

This [indicating] is a Russian universal coal-cutting machine. It looks like a very good design. This cutter bar, you see, Mr. Dawson, can be turned up this way [indicating], so if you want to cut at the top of the seam, you just roll it right over and cut at the top. Here it is shown making a bottom cut. They can make vertical cuts with it if they want to. We have machines of this kind in this country. That is copied from an American machine.

Here is one distinctively Russian, the Donbass, the best of their continuous-mining machines. It is a very good machine. It is about the equivalent of the British Meco-Moore. It is their own design and own invention. It has done a good job. It is designed for long-wall mining. We do not do that in this country.

Mr. EDMONDSON. What do you mean by long-wall mining? I was interested in that phrase when used in the report here.

Mr. MORROW. Suppose this table top [indicating] is a body of coal that we are going to mine out. If we are mining that by the American system, let's assume we could go in from the side of the hill at this point [indicating]. You drive in probably toward the back. You turn off, lateral entries off here, and run rooms off those, and you leave bodies of coal in between those tunnels. Those are the pillars that you leave to hold up the roof while you are getting your mine developed. Then you take them out. You let the roof fall in behind you when you are through. You are all done. You have got your coal out and let the roof drop.

In Western Europe, where their coal seams are deep and there is much heavier weight on them, some are thinner, and various other conditions that militate against room and portal mining. There they use long wall mining.

Let's take this tabletop and say we are going to mine long wall. There are two ways, advancing or retreating. Let's take advancing long wall.

We will start here. For instance, here is a panel of coal you are going to mine on long wall. You drive a pair of entries right up through the middle here connecting with air transport. You start coming up along this side here and you begin slicing across here [indicating]. That is perhaps 200 yards, and you just cut a slice across. The first thing, the roof is going to fall in behind you here [indicating]. So you have got to take rock and build up solid-rock pillars as quickly as you can to hold that roof up, and you use hydraulic jacks.

You will see in that article on Russian mining equipment some examples of the tremendous jacks they are using over there—hydraulic jacks. You try to keep the roof from breaking if you can. They are now where they can break it, but originally, no. You must make it bend down, and it will bend down about 1 inch every foot you go back from solid coal. That is, if you are 6 feet back from the solid edge of the coal, undisturbed, your rock will have bent down 6 inches. So you go on forward with that long-wall system of mining, and you have to move the coal from here to the conveyor on this side [indicating]. The air comes up here, goes across, comes back down here. You have to keep the air cores on this side, got to keep the entry on this side, and on this side here, too. But the roof is going to come in behind you and settle down, so you make these passageways just as small as you can. It is very difficult and very expensive to maintain.

They will have a conveyor running across here [indicating]. The coal is loaded onto them here, and the conveyor is outside the line of crops. That is close to coal. You make a cut across here and set the line of those jacks right against the solid coal. The next time you come down there and start to cut across with a cutter loader or something like that, you have got to move the jack every time you come to it, take it out and recess it. You move the coal between them off onto this conveyor.

This Russian machine right here is designed to do that job. It cuts that coal as it comes along here, pushes it out onto this conveyor that is right out here [indicating].

The British have a machine somewhat like that, different design, to do the same thing.

Joy's subsidiary in England is developing a new kind of cutter loader. I talked to our chief engineer who is on that job yesterday on the telephone, and he is quite hopeful he can get it done. If he does, it will obsolete every mining machine in Western Europe working on long-wall mining because it will be so superior. It will work inside that crop line, and the coal, instead of coming out between the jacks all the time, which are in the way, will flow out behind it on an extensible conveyor that will go out here [indicating] and turn a right-angle corner without spilling the coal off. That is a neat trick to do.

Mr. EDMONDSON. Do you feel that this menace of an increasing coal industry and an increasing technological knowledge in the coal field is really continuously increasing the danger of this type of competition in this field from Russia then?

Mr. MORROW. I would say definitely so; yes, Mr. Chairman. So far as competition with us is concerned, at the present time they are nowhere up to us, but they are getting better. Three years ago they were having a good deal of trouble with factory management. It was a problem.

Mr. EDMONDSON. Do you think their research program in the machine end of it compares with the research program that our machine-building industry is carrying on?

Mr. MORROW. For their conditions on their long-wall mining, I would say, "Yes." But what disturbs me about them is a lot of that coal they have over there, particularly in Siberia, does not need to be mined long wall. They can mine it by our American system. They have not done so up to date, and that is inherent, too, in the communistic setup there.

You are a mining engineer and you would like to try room-pillar mining, the American system, and you take your life in your hands and you recommend it for this mine. Nobody ever did it before there but you start to try it out and it does not work. You know what happens to you.

The consequence is that when they open a new coal field is they open it just the way they have opened all the others, because there you are safe. They have mined it that way for 50 years, and nobody can say this is something that should not have been done. That is what they have always done. But someday they may wake up. When they do, they will mine coal as efficiently as we will, with American-type equipment. They will not bother to develop their own, they will copy ours.

Mr. EDMONDSON. Their manpower advantage and the fact they do not have the problems of recruiting manpower when they want it, those two things give them a tremendous edge in the production of coal at the outset.

Mr. MORROW. That is true. It gives them especially an edge in production over the Western European countries. For instance, take England, France, Western Germany; they are all short of miners. In fact, they are short of miners all over the world except in the Iron Curtain and Communist countries. It is very difficult to get a young man to go in a coal mine in Great Britain.

Mr. EDMONDSON. They do not have that problem in Soviet Russia, though.

Mr. MORROW. No, sir; they do not. But in Great Britain they not only prefer to do something else, but if you are a young chap, it really gets you—the girls in the village will not walk out with you if you are a coal miner. They would rather go out with somebody else. That is very effective in keeping a young man out of the coal mines. [Laughter.]

Mr. EDMONDSON. No further questions.

Mr. SAYLOR. Mr. Dawson.

Mr. DAWSON. No questions.

Mr. SAYLOR. Mr. Chenoweth.

Mr. CHENOWETH. What is the demand for coal mining machinery today as compared, say, with 5 or 10 years ago?

Mr. MORROW. Much higher.

Mr. CHENOWETH. It is much higher?

Mr. MORROW. Yes, sir.

Mr. CHENOWETH. Where does the demand come from principally?

Mr. MORROW. Well, it comes from all over the world. Here in the United States coal production is on the upgrade, and nobody would think of opening a mine today, a new coal mine, without equipping it with the latest, most productive machines he can find, because it is difficult to get miners here as elsewhere; you must have the lowest possible cost you can get, and you get very low cost with modern equipment in the mine if it is laid out in the best manner to make use of it. I would say the management of mines in this country is superb.

Mr. CHENOWETH. Do you feel the increase in production is going to continue?

Mr. MORROW. Yes, sir, very definitely.

Mr. CHENOWETH. For how long?

Mr. MORROW. As far ahead as I can see.

Mr. CHENOWETH. Are you as optimistic as Dr. Rose here?

Mr. MORROW. I did not hear all of his testimony, but that part of it I did hear I agreed with completely. Completely.

Mr. CHENOWETH. You feel very optimistic about the future of the coal mining industry?

Mr. MORROW. Yes, sir; I do. I might say that the demand for coal in Europe is going to increase very greatly, too.

Mr. CHENOWETH. You feel this increased demand for coal is going to come regardless of what we do about research or technological development?

Mr. MORROW. Yes. You need the research and technological development to keep up with it.

Mr. CHENOWETH. You think the demand is going to run ahead of research?

Mr. MORROW. Yes. We need to have the research to make the best utilization of the coal we can. But the same things are happening all over the world.

You would think South Africa, with plenty of native labor down there, and they are short of men in every mine of South Africa—coper, gold, lead, zinc, coal, what have you. They are going into machinery.

Mr. SAYLOR. By the way, Mr. Morrow, this new machine you just described as being able to mine in about 29 inches, will that be the continuous miner?

Mr. MORROW. Yes, sir.

Mr. SAYLOR. That will be especially beneficial in this area through here.

Mr. MORROW. We think so. This is one of the mining markets the company is shooting at right up here.

Mr. DAWSON. Are not most of the larger manufacturers, at least in this country, doing the same thing you are—going abroad?

Mr. MORROW. Yes, sir.

Mr. DAWSON. I have in mind the Simco Corp.

Mr. MORROW. At Salt Lake City.

Mr. DAWSON. They make similar type of machinery, and I know they have branches over in France, Belgium, and other places.

Mr. MORROW. They do.

Mr. DAWSON. That would lead me to believe that American manufacturers are capturing a lot of the market abroad for machinery of this type.

Mr. MORROW. That is correct.

Mr. SAYLOR. The next witness is Dr. H. B. Charmbury, who is head of the department of mineral preparation, College of Mineral Industries, Pennsylvania State University.

Mr. CHARMBURY. I have a prepared statement. I would like to follow through with this statement.

Mr. SAYLOR. You may proceed, Doctor.

STATEMENT OF H. B. CHARMBURY, PROFESSOR AND HEAD OF THE DEPARTMENT OF MINERAL PREPARATION, THE PENNSYLVANIA STATE UNIVERSITY

Mr. CHARMBURY. In spite of all the recent developments in the field of atomic and solar energy and in spite of all the money being spent by Government and by private industry to develop these forms of energy, the coal industry must look forward to a steadily increasing growth to meet our country's needs for industrial and domestic uses, for steelmaking, and for the production of electricity.

The constant rise in our population, and the sharp expansion of our public demands for greater conveniences supply, and will continue to supply, the impetus for the progress in the coal industry. It is probable that nuclear reactions, and eventually, solar heat will be the source of a part of the energy needed to generate electricity, but the demand for electricity will be increased so much in the years to come that the consumption of coal for this purpose will undoubtedly continue to rise.

When we add to the coal needed for industrial and domestic uses and energy that which will be required in the not too distant future to supplement our oil and gas supplies and the coal that will soon be increasingly used for coal chemicals, the long-term prospect for the coal industry is good.

Great expenditures of time and money have been made, particularly by Government to develop atomic energy. This is rightly so because of the great potentialities offered by these developments both from a national security standpoint and from added conveniences for our social growth. Yet the amount of time and money spent by Government for the development of the potentialities contained in coal has been pitifully small, particularly since time and time again the Government has had to call upon the coal industry as a savior in national emergencies, referring to the last two World Wars.

The main reason why coal has not received anything like the financial support given to atomic energy is that the development of the coal industry into an economic giant came in the days when Government spent little or no money to help any industry.

Perhaps the only exception to this statement is that the low taxes of the late 19th and early 20th centuries were in themselves a subsidy to any growing industry. There is little doubt but that, had a larger portion of the profits of the good old days been spent for research and for hiring highly trained engineers, the various depressed periods that the coal industry has known in this century would have been considerably alleviated, though not, of course, entirely prevented. Certainly the industry would have been in better condition to meet the competition which the rise of oil and gas and water power as energy sources introduced in the first decades of the 20th century, if it had

given more thought and spent more money on anticipating what forms such competition might take.

This does not mean, of course, that the coal industry has not progressed in the last 50 years. In the last decade, in particular, competition has done much to increase the efficiency of the equipment used by the industry.

Today a faceman can produce twice what he did 10 years ago, but how much more could he produce if large-scale research on coal mining problems had been started 50 years ago? And how much better would be the coal now produced and how much more efficiently would it be used if equal effort had been devoted to its preparation and combustion for the same 50 years?

If the coal industry is going to make that progress that it must to meet the increasing demands imposed upon it once again by this country, then it must have help.

The coal industry must have more technically trained engineers for the efficient production, preparation, and utilization of coal, and the industry must have more technical know-how to handle the more difficult problems and to handle more difficult cleaning and preparation problems. Both of these problems, the training of men for the industry and the provision of technical know-how, can be solved by a well-balanced and well-operated research program on all phases of the industry to be conducted in the college, university, Government, and industrial laboratories that are properly equipped and staffed to handle coal research.

A typical example of the need for help by the coal industry can be cited here in the central Pennsylvania area. In this area, many of the coal seams are thin seams, that is, less than 36 inches high. At the present time the seams higher than 36 inches can be produced and prepared so that they compete with other coals.

Production in seams greater than 36 inches is in the range of 20 to 30 tons per man-day of faceman. Production in seams 30 to 36 inches drops down to 12 to 20 tons per man-day of facemen and thus the cost becomes too great for competition.

It must be pointed out that most of our reserve tonnage in central Pennsylvania is in seams less than 30 inches. At the present time these cannot be mined and compete with coal from thicker seams or compete with oil and gas. Research must provide the answer on the mining of thin seams. So I was very happy to hear Mr. Morrow's statement on the 25 inch miner.

Also, coals all over the country that are being produced today are lower in quality than those produced in the past; that is, they have more ash and more sulfur. The ash and sulfur must be removed.

Today, 60 percent of all of the coal produced must be washed or cleaned before it is suitable for the market. More efficient and more economical methods of coal preparation are needed for these coals. Some of the coals remaining in the ground cannot even be cleaned or prepared by known methods. Research must provide the answer on preparing coals.

Practically all of the coal being used on the market today is either burned to generate heat and steam for electricity or it is carbonized to form coal chemicals and coke for steel production.

Much is to be desired for increasing the efficiency during the combustion and carbonization of coal and new economical methods of

utilizing, gasifying, and liquifying coal must be developed to supplement, or possibly even replace, our gaseous and liquid fuels should their supply become exhausted. Research must provide the answers for utilizing coal.

The need for research to provide technical know-how has been pointed out above. The industry also needs technical graduates.

Today a large portion of the mining and preparation engineering graduates and the fuel technology graduates are entering other industries. They are not entering the coal industry; in fact, some are not even interested in hearing of its possibilities or even considering the coal industry as a place to work.

Last year we graduated from Penn State some 22 men at all levels—bachelors, masters, and doctors degree—in the fields of mining, preparation, and fuel technology, and of these, only about 50 percent entered the coal industry. This is not particularly due to the salary situation, for the salaries being offered by the coal industry are comparable to those of other industries.

Upon questioning these graduates who normally would enter the coal industry, they frankly state, for the most part, that they consider coal on the way out. This impression is definitely not developed within their instruction courses; in fact, their instruction is quite to the contrary.

However, due to the bad publicity about the coal industry, such as the difficulties of a dependable supply due to strikes, railroad car shortages, and permanent loss of trained labor in distressed periods, plus the glamorous writeups about other energy-producing materials, the general impression is created that the coal industry is dying, if not already dead.

Every Sunday newspaper and most of the daily papers contain advertisements practically begging the young engineers, regardless of their specific training, to enter the field of commercial atomic power, jet fuels, guided missiles, and the like. Compare this with the stories about coal and the answer is rather obvious.

The fact that bituminous coal production in this country has maintained a production level of 400 to 600 million tons per year since 1920, which, incidentally, is more than all of the metallic mining production put together over the same period, and the fact that the coal industry is anticipating increased production up to about 1 billion tons by 1975, are so little emphasized as to make only a meager impression upon the minds of the graduates.

Within its past 100 years, the Pennsylvania State University, through its College of Mineral Industries, has technically trained, in all probability, more mining engineers, preparation engineers, and fuel technologists for the coal industry than any other college or university in this country. The laboratories of the College of Mineral Industries at Penn State are about as well equipped as any in the country for coal research, and the staff is well qualified to supervise research and to train men, but adequate funds are lacking.

Coal research has been a prominent part of the graduate and research program of the College of Mineral Industries for many years. Coal research at the College of Mineral Industries has been supported largely by grants from the coal industry and by a special matching appropriation from the State. Additional funds have come

from Atomic Energy Commission research projects and from the university itself.

For the fiscal year ending June 30, 1956, industrial support of the program amounted to only $54,204 and State support was about $35,000. For an industry extracting, preparing, and selling nearly a billion dollars a year worth of coal, and employing in the mining of this product alone over 75,000 Pennsylvanians, this is indeed a small-scale research effort. In realization of this deplorable situation, members of the last session of the State legislature appropriated $500,000 for coal research. This was brought out previously.

However, on a ruling by the attorney general of the Commonwealth, this fund of one-half a million dollars could only be used for research on methods of utilizing coal. Research on mining and preparation were neglected. Additional funds of comparable amounts are needed in the fields of coal-mining research, and in the field of coal preparation research, to provide a well-balanced research program. Research funds must also be provided for other laboratories that are equipped and staffed.

To start an entirely new program of constructing buildings and research laboratories would be a waste of the Government's time and the taxpayers' money. The laboratories and supervisors are available throughout the country in college, university, Government, and private institutions, but funds are lacking.

These institutions should conduct this essential research under the direction of an advisory board or commission appointed by the Government.

Through a well-balanced coal research program on mining, preparation, and utilization, the Federal Government will provide a conservation program for the Government, a prosperous program for the industry, and an economical program for the citizens all over the country whose lives are influenced by our greatest natural resource, coal.

Thank you very much.

Mr. SAYLOR. Thank you, Dr. Charmbury, for a very excellent statement, together with the fine recommendations which you have made.

I am delighted to have noticed on the first page of your prepared statement you called attention to the fact that all of the programs or anticipated schedules for the use of electricity have been woefully short as compared with the actual needs as time developed. I think that in the years to come, coal is going to have to be the source which will supply most of our electrical needs.

Mr. CHARMBURY. Coal is our greatest natural resource. Our supplies are greater than any other fuel resource we have.

Mr. SAYLOR. Mr. Edmondson.

Mr. EDMONDSON. I think you have made a very fine statement, and I certainly agree that, if we fail to utilize these existing laboratory facilities and technicians and scientists who are available to the job, we are wasting a great asset we have, just as we are wasting the asset of the coal.

I hope that we can devise a method that will not duplicate in that regard.

Mr. CHARMBURY. And the laboratories and staff of the Bureau of Mines, the laboratories and the staff of the Bituminous Coal Research,

the laboratories and staff of a great many of our colleges and universities in the coal-producing States.

Mr. EDMONDSON. We have certainly proved with the utilization of those school and university facilities, in particular in the atomic-energy program, that it is a great source of scientific know-how and of technical know-how if we will just use it.

I certainly appreciate your statement very much. I have no questions.

Mr. SAYLOR. Mr. Dawson.

Mr. DAWSON. I notice your figures on the amount of support you received at Penn State up until this year, which was $35,000 State support and $54,000 industrial support. If I remember the figures presented by previous witnesses, the amount allocated to Penn State out of this half-million dollars came in 2 grants, and they ran up approximately to $200,000, just roughly.

Mr. CHARMBURY. I believe about $300,000.

Mr. DAWSON. In other words, you are getting about two-thirds of this money. Have you used any of it yet?

Mr. CHARMBURY. No. This is in the process of being organized now. Research problems have been selected and the staff is being organized and getting started now.

Mr. DAWSON. Is your view that the wording of the act should be liberalized to permit you to get into the fields of preparation and mining as well as utilization?

Mr. CHARMBURY. I think that research in the fields of mining preparation is just as important as in the fields of utilization if we are going to have a well-balanced program.

Mr. DAWSON. Listening to the testimony of Mr. Morrow, I think he indicated in their experimental mine they were going into methods of mining quite extensively. Is it the feeling of the legislature that perhaps that field is pretty well preempted and you should devote yourself more to the utilization field rather than to the mining field?

Mr. CHARMBURY. No. I was very happy to hear Mr. Morrow's statement, because we of Penn State have a research program which is sponsored, a fundamental research program which is sponsored by the Joy Manufacturing Co. We are conducting fundamental research for them along the lines of the industrial efforts he mentioned here.

Mr. EDMONDSON. Will the gentleman yield?

Mr. DAWSON. Yes.

Mr. EDMONDSON. So part of the $4 million annual expenditure which Mr. Morrow spoke about goes into Penn State already for research that you do. Is that correct?

Mr. CHARMBURY. For fundamental research. I think he is correct when he says the development of machine research should be done by companies. I think this is correct. I think universities and other laboratories can do the fundamental research, the basic research.

Mr. DAWSON. You do not feel the Federal Government itself should get into the active field of research then?

Mr. CHARMBURY. No; I did not say that. I did not mean to imply that at least. There are other laboratories, such as the laboratories of the Bituminous Coal Research, which are doing quite a bit of development work, and this should be a part of the Federal program—basic and applied research both. But I think the laboratories have to be

selected, certain laboratories for basic research, certain laboratories for applied research.

Mr. DAWSON. That is all.

Mr. SAYLOR. Mr. Chenoweth.

Mr. CHENOWETH. You seem to be very optimistic about the future of the coal-mining industry. Is that a correct assumption from your statement?

Mr. CHARMBURY. That is correct.

Mr. CHENOWETH. I think, coming from a coal State, I have heard more optimism today here about the coal-mining industry than I have heard in many years. Is this just something recent? Has some recent development caused this new outlook?

Mr. CHARMBURY. Well, production was quite low in 1954, and since then, with the utilities and aluminum industry, as pointed out by Dr. Rose, the use for coal has been increased.

Mr. CHENOWETH. This demand for coal is increasing despite our lack of adequate research. In spite of ourselves, the demand for coal is increasing. If we had the proper research, do you think it would increase at a more accelerated rate?

Mr. CHARMBURY. I certainly do. Plus the fact, if you do not have the proper research, the competitive fuels are going to step into the picture.

Mr. CHENOWETH. Do you think coal is holding its own in this race with the other fuels?

Mr. CHARMBURY. Within the last year or two, it appears that way.

Mr. CHENOWETH. What has brought that about?

Mr. CHARMBURY. The production, the economy, the overall picture.

Mr. CHENOWETH. Do you mean coal is being produced cheaper now?

Mr. CHARMBURY. No. Let's say that the price of oil and gas has increased, as pointed out by previous people; that coal is now a competitive fuel.

Mr. CHENOWETH. But it was not up until a short time ago.

Mr. CHARMBURY. Markets have increased. The utilities have increased considerably, as was pointed out, by the use of air conditioners, the increase in air conditioners.

Mr. CHENOWETH. I believe you mentioned that steel and the utilities are the two principal purchasers of coal in this expanding market.

Mr. CHARMBURY. I said that most of the coal goes to combustion or carbonization.

Mr. CHENOWETH. You have lost the railroads and other markets, but steel and utilities are increasing at a rapid rate?

Mr. CHARMBURY. And industrial fuel.

Mr. CHENOWETH. By that you mean——

Mr. CHARMBURY. Large manufacturers.

Mr. CHENOWETH. They are using coal more than gas or other fuels?

Mr. CHARMBURY. Coal is now competing with gas and oil.

Mr. CHENOWETH. Many of them changed from coal to gas in years gone by?

Mr. CHARMBURY. Yes.

Mr. CHENOWETH. And now they are changing back?

Mr. CHARMBURY. There is a tendency toward that.

Mr. CHENOWETH. Is that a pretty pronounced tendency?

Mr. CHARMBURY. I would not say it is pronounced, but it is the tendency.

Mr. CHENOWETH. I was interested in what you said about the attitude of young men graduates. It is true and always will be, Doctor, that coal is not a very glamorous industry. If you are going to try to compete with other industries from that standpoint, you are not going to get these young men.

You say they have the impression the coal industry is either dying or dead. What are you doing to refute that impression?

Mr. CHARMBURY. We are trying to point out some of the things I have pointed out here—how the coal industry is looking forward to higher and higher production; how the coal industry needs men if it is going to meet this production schedule.

Mr. CHENOWETH. Where would these young men go to work for the coal industry if they were attracted to it?

Mr. CHARMBURY. Our graduates go with mining companies, they go with equipment manufacturing companies, they go into various research laboratories, they go into sales work.

Mr. CHENOWETH. Is there such demand that it exceeds the supply then?

Mr. CHARMBURY. Last year I do not believe there was a graduate that had less than 10 offers.

Mr. CHENOWETH. Is that a fact? That is from the coal industry?

Mr. CHARMBURY. From the coal industry and related industries.

Mr. CHENOWETH. You say about half went into the coal industry?

Mr. CHARMBURY. That is right.

Mr. CHENOWETH. You say the salary is comparable?

Mr. CHARMBURY. That is right.

Mr. CHENOWETH. Do you think you are making some progress in your efforts to create a better impression of the coal industry, better prospects for the future?

Mr. CHARMBURY. I hope so. We have made progress in our scholarship program.

Mr. CHENOWETH. What is that?

Mr. CHARMBURY. Where various companies are now sponsoring scholarships and assisting with the education—financial part of the education of the students—and then the students are not necessarily obligated to go with the companies, but they have a responsibility to the companies.

Mr. CHENOWETH. Do you have a special course, Doctor, for preparation for the coal industry, for work in the industry, or are your courses similar?

Mr. CHARMBURY. We have courses in mining. In other words, it is possible for a boy to receive his degree in mining engineering, in mineral-preparation engineering which includes coal preparation, in fuel technology for the utilization of coal, in geology, the geological aspects of coal, in mineralogy.

Mr. CHENOWETH. I just wondered if the coal course was an optional subject with them or whether it was compulsory to take coal studies.

Mr. CHARMBURY. In the department of mineral preparation we have courses in coal preparation, plant layout, and design. We also include preparation of iron ore and other minerals.

Mr. CHENOWETH. But to graduate in mining engineering at your college you have to take the coal studies, do you?

Mr. CHARMBURY. Those that want to take the coal studies.

Mr. CHENOWETH. Is that optional?

Mr. CHARMBURY. It has been changed now so that it is possible for a student to graduate in coal mining or in hard-rock mining as an option.

Mr. CHENOWETH. As an option?

Mr. CHARMBURY. Yes. This has just been changed in the past 2 years.

Mr. CHENOWETH. My thought was that in this great State of Pennsylvania, this great coal State, through its interest in coal and the necessity for doing everything possible to increase the production of coal, surely in your college you are doing everything you can to urge the study of coal or the coal industry.

Mr. CHARMBURY. Certainly.

Mr. CHENOWETH. To prepare these young men for a place in the industry.

Mr. CHARMBURY. That is correct.

Mr. CHENOWETH. I am sure you are doing a good job. That is all.

Mr. SAYLOR. I want to say, Judge, that when the first pieces appeared in the paper that I had even introduced this resolution one of the first persons to get in touch with me was Dr. Charmbury, telling me of the need that he felt for legislation such as this type because of the interest that he has had in coal. I am delighted, Doctor, to have you here today.

Mr. CHARMBURY. Thank you very much.

Mr. SAYLOR. The next witness we are going to call on is T. Reed Scollon, who is the Chief of the Bureau of Bituminous Coal of the United States Bureau of Mines. I understand Mr. Scollon is not going to testify but is going to introduce Mr. Richard C. Corey, who is Chief of the Solid Fuels Technology of region No. 5 of the United States Bureau of Mines.

Mr. SCOLLON. Before I introduce Mr. Corey, in view of the trend of questioning toward European coal supplies and particularly the Soviet Union situation, it occurred to me that the committee might be interested in a report that the Bureau of Mines published 2 days ago. We have not had a chance to mail you one yet. It is Information Circular 7778. It is entitled "Review of Coal Supplies and Requirements in Western European and Soviet Bloc Countries in 1955 and 1956." With your permission, I will submit it for the record, and we can give you additional copies if you wish.

Mr. SAYLOR. Thank you, Mr. Scollon.

Mr. SCOLLON. As you will recall, the Bureau of Mines representatives testified quite extensively in Washington last June. At your request we have asked Mr. Corey to bring you a little of the local picture. Mr. Corey is Chief of the Division of Solid Fuels Technology in region 5, with headquarters in Pittsburgh.

Mr. Corey has had about 30 years' experience in coal technology, about 10 of which have been with the Bureau in Pittsburgh. Thank you.

Mr. SAYLOR. We appreciate your being here, Mr. Corey, and will ask you to take your seat down there and proceed.

Mr. DAWSON. Mr. Chairman, Information Circular 7778 is rather voluminous, and I would suggest or offer a motion at the proper point that the chairman of this committee and the presiding chairman,

with the consent of the committee, might like to go through this information and take out such portions as they think might be helpful for the record. I would make a motion that it be left to the discretion of the committee chairman so we will not clutter the record up with some material that is not needed but put it in the file.

Mr. EDMONDSON. I would think the gentleman from Pennsylvania would want to have all of these publications submitted and quite a number of them accepted for the file, with the understanding that portions of them would be extracted for the record.

Mr. DAWSON. I will make such a motion if you care to have it, the motion being that we leave it up to the chairman to decide what portions of these documents which are submitted for the file be taken out and made a part of the record.

Mr. EDMONDSON. If there is no objection, it will be so ordered.

STATEMENT OF RICHARD C. COREY, CHIEF, DIVISION OF SOLID FUELS TECHNOLOGY, REGION 5, BUREAU OF MINES, PITTSBURGH, PA.

Mr. COREY. Mr. Chairman and gentlemen, owing to the magnitude and diversity of the Bureau's work I will only attempt to hit the high spots in a general way of the Bureau's research, and will be glad to furnish any details later you may desire.

The Division of Solid Fuels Technology in region 5 of the Bureau of Mines is concerned primarily with fundamental and applied research on bituminous coal. Division headquarters and a number of laboratories are located in Pittsburgh, Pa., and various organizational segments of the Division are located in Bruceton, Pa., Morgantown, W. Va., Tuscaloosa, Ala., Gorgas, Ala., and College Park, Md. Total professional, subprofessional, and clerical personnel number about 500.

It may be of interest to note, in passing, that most of our key personnel are Government career research men with upward of 35 years' experience in fuel technology. We are also fortunate in having a nucleus of highly specialized research chemists and engineers who through their association with the Bureau have acquired an international reputation in their field. It is sometimes a mystery to me as to really how we hold these men, but I have come to the conclusion that is probably as a result of the intellectual atmosphere that the Bureau provides for men of this caliber.

Of some $3 million allotted to the Division for coal research in fiscal year 1957, $2 million has been apportioned to the laboratories in western Pennsylvania, that is, at Pittsburgh and Bruceton.

The broad objectives of the research at these laboratories are to promote wise conservation of coal through more economical and efficient recovery, preparation, and utilization practices, and to seek and develop new methods for using coal, and thereby to increase coal's contribution to the total energy demands of the country. At the present time I believe coal furnishes about 30 percent of the total energy demands. We can foresee a much larger share in the future.

Within the framework of these objectives, the Pittsburgh and Bruceton laboratories are concerned with research in connection with coal mining and preparation methods; the combustion, carbonization,

and analysis of coal; the conversion of coal to liquid and gaseous fuels; and the fundamental chemical and physical properties of coal.

In addition to the research efforts, the Pittsburgh laboratories are also engaged in sampling and analyzing coal in connection with Federal purchases of coal by specification and contract. On request, consulting services are furnished to Government-operated coal-burning plants, to effect maximum operating economies.

Another phase of the work, as distinguished from both the research work and the services to other Government agencies, is what might be termed survey work. Specifically, this entails testing a large number of samples of Pennsylvania bituminous coals to ascertain both their amenability to washing to remove undesirable mineral constituents, and their suitability for making metallurgical coke.

In the field of coal-mining research, the principal objectives are to increase the recovery of underground coal, and thus extend mineable reserves; to improve mining practices and efficiency, and thereby reduce costs; and to increase safety in mining. To these ends the Bureau is presently engaged in the following activities:

1. We are making measurements in the mines of pillars of coal left unmined, to determine if mining is full seam or selective, and if pillars are recovered. If we have more accurate knowledge of recovery, it is hoped that better methods of recovery will be developed.

2. We are making studies at mine faces to determine the methods and equipment used to move the coal from the face to the tipple, for the various systems of mining.

3. We are making evaluation of the relative costs of roof bolting and conventional timbering: a favorable finding, a finding of a cheaper method, for roof bolting might result in greater use of this method of support.

4. We are making evaluation of the various conventional systems of face communication; comprehensive and reliable information in this connection conceivably would contribute to improvements in underground safety, maintenance, and supervision.

The next field is coal preparation research where the principal objectives are to develop new or improved methods of cleaning both marginal coals and those that are difficult to clean; and to provide industry with accurate data on the preparation characteristics of bituminous coal.

In this connection we are first making experimental studies in the laboratory of dense washing media, such as pyrites, cinders, and other inexpensive media, to find one that is superior to magnetite.

2. We are making investigation of the fundamental properties of suspensions of coal in various media, from the standpoint of obtaining more efficient separation of mineral constituents from coal.

3. We are making a systematic study of the preparation characteristics of bituminous coals from all of the important beds in Pennsylvania.

The next activity which is an important one is combustion research, which is directed primarily toward improving the thermal efficiency of conventional coal-burning equipment, and to devise new ways to burn coal. The following studies are presently underway in this connection:

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1. Investigation of the heat-transfer and aerodynamic characteristics of pulverized-coal flames, to promote a better understanding of these important, though little-known, factors.

Mr. DAWSON. At that point. Who developed the process for getting greater efficiency out of combustion that they are now using? Was that your Department or did it come from private industry?

Mr. COREY. It came about in many ways. The Bureau has been in combustion research for many years. Many of the early developments of the Bureau of Mines were adopted by industry and, of course, industry has also made their own contributions in that field to improve combustion efficiency. So you cannot point to any one man or organization or group as having done it singlehandedly.

2. We are also investigating the role of ash, slag, and other inorganic deposits on the heat-transfer surfaces in boiler furnaces. Better knowledge of the difficulties created by these deposits is a necessary basis for solving such problems.

3. We are investigating methods for storing and utilizing low-grade coals, especially high-ash fuels, such as refuse coals from washeries. There are essentially three phases to this work: (*a*) Study of the factors that cause spontaneous heating in storage piles; (*b*) development of a process for manufacturing light-weight aggregate from refuse coal; and (*c*) study of the combustion characteristics of high-ash coals.

The next principal activity in utilization is that of coal carbonization research, the principal objectives are: (*a*) To determine the yields and quality of coke and chemical products from high-temperature carbonization; (*b*) to investigate the chemistry and physics of the carbonization process; and (*c*) to survey the carbonizing properties of Pennsylvania coals. To these ends the following work is being performed:

1. We are making experimental studies of the effects of flue temperatures, coal density, moisture content, and oven geometry, on the quality of coke produced, and the amount of pressure developed in the oven during the carbonization process.

2. Systematic experiments to determine the effects of temperature, pressure, and various reactive materials, on the thermal decomposition of coal. An important byproduct of this phase of the work will be the development of economical and feasible methods for changing a coal that is not normally a coking coal to one that will yield a coke with acceptable physical properties, and thus extend the potential reserves of coking coals.

Concerning the chemical and physical properties of coal, intensive studies are in progress of the petrographic constituents in coal, in relation to the part they play in combustion, carbonization, and gasification of coal. In addition, fundamental studies are being made of the optical properties of coal, in an effort to strengthen our knowledge of its chemical structure. It is through such research that the horizons for the use of coal will be broadened.

The Bruceton Laboratories are engaged largely in studies of methods for converting coal to liquid and gaseous fuels. The principal efforts in this direction are: (*a*) The direct hydrogenation of coal, employing pressures up to 10,000 pounds per square inch, and temperatures of the order of 500° C.; and (*a*) the conversion of mixture of carbon monoxide and hydrogen to synthetic fuels by means

of various catalytic processes. The carbon monoxide and hydrogen would be derived by complete gasification of coal at high temperatures and pressures in the first place.

In coal hydrogenation, the major emphasis is on studies in semicontinuous, bench-scale equipment and in autoclaves. Consideration is being given to studies of the effects on the coal-hydrogenation reaction of irradiation with high-intensity gamma rays.

The emphasis this year on the catalytic process, known generally as the Fischer-Tropach process, is the hot-gas recycle process. As the result of Bruceton research in recent years, this process shows promise of lowering substantially the costs of synthetic fuels.

Now I would like to make a few additional remarks generated by some comments here this morning about synthetic liquid fuels.

I think we are all agreed that synthetic liquid fuels are somewhat far off costwise. If there was a national emergency, I think we could make liquid fuels from coal without much difficulty; at present-day prices to make gasoline or fuel oil from coal is a little bit out of the economic picture. However, I think that the brightest picture on the horizon for coal is to pick up where natural gas starts to leave off. We can make methane or natural gas from coal at a cost that is probably—I will give it to you in numbers—about a dollar a thousand cubic feet, which is about a dollar for a million British thermal units. If you were buying natural gas today in Pennsylvania, as a householder it costs about 75 cents. So the differential is not too great. The cost of natural gas is rising and we are bringing down the cost of making methane from coal.

I might say this: That in the face of steadily rising energy demand and rising costs of natural gas, there are cogent reason to believe that within the next 10 years a substantial amount of high British thermal unit gas will be produced from coal and delivered to the gas transmission lines to supplement natural-gas supplies. It is envisioned that plants for this purpose will be located in or near the major coal-producing areas.

It was early recognized by the Bureau that the conversion of coal to high British thermal unit gas had many engineering problems and that a systematic research program was needed to solve these problems and to reduce the cost of high British thermal unit gas from coal.

We have made significant progress in this direction in one of the many phases of the process. That is the catalytic conversion of carbon monoxide and hydrogen to methane. Right now the gas industry is engaged in a larger scale research program based upon the Bureau's work.

In addition, the application of nuclear energy to the gasification of coal is also under intensive study by the Bureau, since we believe that the cost of high British thermal unit gas can be lowered substantially by the use of heat produced from nuclear fission.

That is all I have, gentlemen.

Mr. SAYLOR. Mr. Corey, we certainly appreciate your coming here and your testimony.

Might I ask, for the benefit of myself and the other members of the committee, when it would be most convenient for the members of this committee under Mr. Edmondson to pay a visit to the Bureau of Mines in Pittsburgh?

Mr. COREY. Any time would be convenient, sir, if we knew a little ahead of time to make suitable preparations. Forty-eight hours notice or something of that nature.

Mr. SAYLOR. We do not want to disrupt your program. We want to come there and find out as you are just working with the general program you have.

Mr. COREY. Any time you wish.

Mr. DAWSON. Off the record.

(Discussion off the record.)

Mr. SAYLOR. Dr. Corey, this is a very fine and helpful statement, and I personally am looking forward to a visit to the facility at Pittsburgh in the near future.

Are there further questions?

Mr. CHENOWETH. Did you ever have any relatives in the West who were coal-mining engineers?

Mr. COREY. No, sir.

Mr. CHENOWETH. By that name "Corey"?

Mr. COREY. No, sir.

Mr. CHENOWETH. We had one out there who was a very prominent engineer and I thought maybe he was related to you. You mentioned that the use of coal for providing gas to supplement natural gas may be closer than the hydrogenation of coal from a commercial standpoint.

Mr. COREY. Closer than synthetic liquid fuels.

Mr. CHENOWETH. That is right.

Mr. COREY. Yes.

Mr. CHENOWETH. You feel quite sure of that?

Mr. COREY. I am quite sure.

Mr. CHENOWETH. You feel the demand for converting coal to gas is very imminent?

Mr. COREY. The costs of gas are rising tremendously. I was in Louisiana about 4 years ago and gas costs were 5 cents a million British thermal units at the wellhead. It is up to around 20 or 25 cents now. It is a tremendous increase. On top of that, it costs about 1 cent per hundred miles to transport 1,000 cubic feet of gas. That is another 15 or 20 cents by the time it gets up to, say, Pittsburgh or West Virginia.

Mr. CHENOWETH. Do you feel it is going to catch up with coal then?

Mr. COREY. We are pulling down gradually the cost of making gas from coal.

Mr. CHENOWETH. You feel you are going to meet them?

Mr. COREY. Yes.

Mr. CHENOWETH. You feel there is a large opportunity, then, in a wide area to supplement the supply of natural gas with artificial gas?

Mr. COREY. We do not have all of the answers yet, and that is why I say there is still need for some research in that field.

Mr. CHENOWETH. Is the gas industry receptive to such an idea?

Mr. COREY. They have picked up the Bureau's work, scaled it up, and are conducting work and experiments in Chicago right now. I was a little bit surprised that the coal industry did not nibble at that one, but the potentialities of this development are tremendous for the coal industry.

Mr. DAWSON. I will tell you this much: The price of gas in Washington has already reached that stage you talk about.

I have a 2-bedroom house, and I got my bill last week, and it was $50 for the month as compared with approximately $18 a month in Utah for the same size house. That is in the cold months. That is getting up to the point where I think that coal or some other form of fuel has really got an opportunity.

I do not know where the increase in price is coming from, whether the pipelines or the production at the field, but it is really getting very serious.

Mr. COREY. Yes; it is.

Mr. CHENOWETH. I would like to say to my colleague, the suggestion has been made, and there is considerable interest in it, to move the Capital from Washington to Colorado, and then you will be able to get gas a little cheaper. [Laughter.]

Mr. DAWSON. You are getting pretty close. If you just move it into Utah, I will probably go for that.

Mr. CHENOWETH. You will be close enough for the gas. I have one other question. What do you think the role of the Federal Government is in this research program?

We have heard today here about some very fine and extensive programs of research in the private field. Where does the Federal Government and the Bureau of Mines fit into this situation? What should be our role? What should we try to do?

Mr. COREY. Any project that looks as though it might be very long range and of no immediate interest to industry. That is No. 1 on the list for the Government. That could be either pure or applied research.

And there must be a shade of gray in there where somebody would have to make a decision as to whether an industry should do it or the Government. But most of our work up to the present time has been that of a long-range nature, where we knew there was a definite need for the work, but industry was not interested in doing it, or any private organization, because of the cost involved. No immediate profit could be realized from it.

As soon as a project reached the point where industry was interested, we moved out of it.

Mr. CHENOWETH. In other words, you start the project and if it shows some signs of development, private industry moves in?

Mr. COREY. Yes, sir; in some instances.

Mr. CHENOWETH. Do you feel the coal-mining industry has been as alert and diligent as they might have been in this research field, or have they overlooked some opportunities?

Mr. COREY. Well, sir, I do not know personally how much research the coal-mining industry itself is doing. I am familiar only with what universities do, and some private institutions. That is all.

Mr. CHENOWETH. Do you feel they have done a pretty good job?

Mr. COREY. They have. Unfortunately, in private institutions they are doing a considerable amount of coal research, but it is sponsored research, and therefore the public does not get the benefit of it.

Mr. EDMONDSON. Will the gentleman yield?

Mr. CHENOWETH. Yes; I will be glad to.

Mr. EDMONDSON. Is there in the Bureau of Mines today any office or agency that is performing the function of assembling the information

of what research programs are going on privately and making this assembled information available to the industry at large?

Mr. COREY. No, sir; not to make it available to the public. But we in the Bureau are aware of what is going on just as a natural course of events. When we are working on a project, we make a deliberate effort to find out what is going on elsewhere so as not to duplicate, or unnecessarily duplicate, the work.

Mr. EDMONDSON. You say that you do that with regard to universities and schools. Do you do the same thing with regard to private groups and organizations?

Mr. COREY. I should have said, sir, this is only on the basis of published works or personal contacts with people in the field like Professor Charmbury; we know what he is doing from discussions with him and papers that he gives. We know what Dr. Rose is doing. He knows what we are doing, and so on. But there is no clearinghouse for that sort of thing.

Mr. EDMONDSON. That is what I was getting at. There is not in existence today, to your knowledge, any clearinghouse for the assembling of information regarding the different research programs going on?

Mr. COREY. The only effort in that connection really is this [indicating], which the committee is well aware of. That is the first effort I know of, and it was comprehensive. It was lacking in some respects because I am sure there was a lot of sponsored work going on that we could not find anything about.

Mr. SAYLOR. That is in the report made about a year ago?

Mr. COREY. Yes, sir; May 1956. This is Outlook for Research Possibilities.

Mr. SAYLOR. That is right. That is the one we had last year just about the time we began our hearings.

Mr. COREY. Yes. That is the first time that job has been done.

Mr. CHENOWETH. Is all of your coal-research work done in the Pittsburgh laboratory?

Mr. COREY. No, sir.

Mr. CHENOWETH. Where else do you have coal research activity?

Mr. COREY. Morgantown, Va.; Tuscaloosa, Ala.; Gorgas, Ala., and we are speaking now about region 5, with which I am concerned. Mr. Scollon, of course, is responsible for countrywide research.

We have laboratories in Denver, Seattle, Grand Forks, North Dakota, Alaska.

Mr. CHENOWETH. But Pittsburgh would be your main laboratory?

Mr. COREY. That is the big one, sir. Out of about $5 million appropriated for coal research, we are getting about 3 of it in the Pittsburgh area.

Mr. CHENOWETH. About 3 out of 5?

Mr. COREY. Yes, sir.

Mr. CHENOWETH. Is your work in any way handicapped or restricted by lack of funds in your Pittsburgh laboratory?

Mr. COREY. Money is always a problem.

Mr. CHENOWETH. Suppose we were to give you more money. What would you do?

Mr. COREY. We have loads of ideas. The ideas are generated by the men that are doing the work. They take the form of a project proposal, which moves through established channels to the Washington

office where it is approved or disapproved. We have some very large ideas for coal research. You will find a good many of them are in this book. We do not get enough money to do all of those things.

Mr. CHENOWETH. Just give us an example now.

Suppose you had another million dollars. What would you do?

Mr. COREY. I do not think I would want a million dollars in 1 year handed to me, because it would take me 2 years to get tooled up manwise and equipmentwise. But if you gave half that amount, say, on these problems I discussed today, we could double the effort on those profitably as well as undertake some new work, especially in connection with application of nuclear energy to coal processing.

Mr. CHENOWETH. Has the work in your Pittsburgh laboratory been on about the same level for several years?

Mr. COREY. Yes.

Mr. CHENOWETH. Is it expanding?

Mr. COREY. It is up and down. It fluctuates.

Mr. CHENOWETH. What causes the fluctuations?

Mr. COREY. Appropriations.

Mr. CHENOWETH. Do you not get about the same appropriations every year?

Mr. COREY. It does not vary too greatly. I should be more fair and say this: That since about 1947, when I came into the Bureau, it has increased substantially. For the past 5 or 6 years the money that I see in Pittsburgh has probably varied 85 percent up or down, maybe 10 percent.

Mr. CHENOWETH. Whose fault is that?

Mr. DAWSON. Yours.

Mr. CHENOWETH. We are appropriating the same amount of money every year.

Mr. COREY. I think the Budget Bureau has some say in the matter, too.

Mr. EDMONDSON. A considerable amount.

Mr. COREY. We often propose projects to the Director of Bureau of Mines requiring new money and we do not get it.

Mr. SAYLOR. I might say there, if the Judge will yield, I know of a number of cases when the Bureau of Mines has gone in before the Budget Bureau and requested funds for research, and it has been turned down, been told that the amount of money they are getting—in other words, what they were trying to do is not get a million dollars in a year, but to present a long-range program of what they might need in the next 2, 3, 4, 5 years, showing if they started a project they would need increased funds over the next few years, and the Bureau of Budget just said, "No."

Mr. CHENOWETH. I believe my colleague from Pennsylvania here is the author of the resolution which created this special committee.

Mr. SAYLOR. That is right.

Mr. CHENOWETH. I think you had in mind the committee developing ideas here where money could be spent profitably. Money is not the whole thing, as I can see here.

Mr. SAYLOR. No; it is not.

Mr. CHENOWETH. Several witnesses have indicated that if they had more money right now, they could not use it. But I am trying to develop here just where the Federal Government fits into this picture.

The coal mining industry has the Bituminous Coal Research Pro-

gram where they are spending about a million dollars a year. I believe that is what they testified today. It is a project of very great interest to them. They want to increase their business.

This subcommittee has for one of its functions and objectives to develop some way to increase the production of coal. The coal mining industry has been a sick industry. I have heard more optimism expressed here today than I have heard in a long time about the coal industry. I hope the optimism is well-founded and the coal industry is going to come back.

We are very much interested in coal in other States.

Is the Federal Government lagging behind here? Is the coal mining industry lagging behind? Who is causing this lag? Is there something we can do to accelerate the coal mining program?

We know there have been natural causes, like the railroads, for instance. I do not suppose much could be done about that, that if you had all the money you needed up here and asked for, you could not change that.

Mr. COREY. That is right.

Mr. CHENOWETH. I just wonder what field there is you can explore and develop.

Mr. COREY. We could certainly do something to recapture the domestic market. I do not mean to try to convert people back to operating their own stokers, but to emphasize the work we are trying to do to convert coal to methane. There is where the biggest potentiality is.

Mr. CHENOWETH. Do you feel enough gas could be produced which would enable a company to be formed to distribute that gas in competition with natural gas?

Mr. COREY. The way I would look at that thing, it would be more or less like an integrated utility company where they were furnishing electricity and gas. There are such utilities doing that now, and they are very much interested in this whole thing.

Mr. CHENOWETH. Yes.

Mr. COREY. They are some of the sponsors for the American Gas Association, which is doing this work in Chicago.

Mr. EDMONDSON. Will the gentleman yield?

Mr. CHENOWETH. Yes; I will be glad to.

Mr. EDMONDSON. Would that include fuels in the same field as butane and propane?

Mr. COREY. It would be mostly methane. Our natural gas is methane.

Mr. EDMONDSON. There is nothing that you know of in line to develop something definitive with butane and propane?

Mr. COREY. We can produce those gases by the conventional processes that I mentioned before. When we are trying to make synthetic liquid fuels, we get these other gases as a byproduct. You can shift your experimental conditions and increase the ratio of these gaseous fuels over that of competitive products. It is a problem of catalysis, temperature, and pressure. It can be done, but again, it is a matter of economics.

Mr. CHENOWETH. Do you know of any country where they are now producing synthetic liquid fuels from coal on a commercial basis?

Mr. COREY. South Africa is working on this right now. They have a plant at Sasol.

Where else, Mr. Scollon?

Mr. SCOLLON. I think that is the only one.

Mr. COREY. They are going to make it commercially, but that is the only large plant I can think of right now in South Africa.

Mr. CHENOWETH. What causes that plant—a big deposit of coal, cheap labor? What is it?

Mr. COREY. They have a very large deposit of coal and no source of liquid fuel.

Mr. CHENOWETH. None at all?

Mr. COREY. No.

Mr. CHENOWETH. I was surprised to hear Germany was not producing synthetic liquid fuel from coal.

Mr. COREY. It was never an economical process. It was a war baby and the cost was no object.

Mr. CHENOWETH. Should we then consider the process in this country as something we are going to resort to only in the case of an emergency?

Mr. COREY. No, sir.

Mr. CHENOWETH. And that we are never going to come to the place where it is going to be produced on a competitive basis with oil and gas?

Mr. COREY. No.

Mr. CHENOWETH. I got that impresison from all the witnesses who appeared here today. What is your opinion?

Mr. COREY. My feeling is that gasoline prices are going to rise in time as our other gaseous fuels are. The price is bound to go up. In the meantime, we are pulling down the cost of making it from coal. Slowly, but it is coming down.

Mr. CHENOWETH. Were you familiar with the Louisiana, Missouri plant?

Mr. COREY. Yes, sir.

Mr. CHENOWETH. There has been a great deal of criticism of the Federal Government for closing that plant. What are your observations?

Mr. COREY. I was pretty much on the outside looking in at that time. It was not one of my responsibilities, so whatever opinions I have are formed from hearsay, and not enough facts, I am afraid.

The only reliable opinion I have heard—and it is subject to some controversy—is that we were not quite ready to move to a demonstration scale, that we did not have enough fundamental data first. However, that opinion was expressed by a fundamental man and not by a more practical fellow. But there is something in what he said. We are finding that out as we go along in our pilot plant work.

We will build a small pilot plant to get some operating data, costs, and the first thing you know we will find something fundamental that we missed at the smaller scale and we have to take another look at it. This is normal. There is nothing unusual about it.

Mr. CHENOWETH. I think it is important that we make every possible effort to develop that process as rapidly as possible if it has any commercial possibilities.

Mr. COREY. It is an extremely difficult problem, the hydrogenation of coal. We probably know less about that process today than we know about the reactions of the atom. It is that difficult.

Mr. CHENOWETH. Did not Germany perfect that to a large extent during the war and produce their fuel from coal?

Mr. COREY. Yes, sir. They had a process, but we could not use it over here economically.

Mr. CHENOWETH. We could not do that here?

Mr. COREY. We can do it, but it costs too much money.

Mr. CHENOWETH. It costs too much money?

Mr. COREY. We could take that process and improve on it, or change it in various ways.

Mr. CHENOWETH. That, I assume, is what you are doing now?

Mr. COREY. Yes.

Mr. CHENOWETH. What efforts are being made in the Pittsburgh office?

Mr. COREY. We are still trying to get hydrogen to mix with coal and change its composition. The ways in which you do this are many.

Mr. CHENOWETH. I see.

Mr. COREY. And it is very difficult. It is a very difficult research project.

Mr. CHENOWETH. You are some distance away from the completion of the project?

Mr. COREY. Yes, sir; costwise. The Fischer-Tropsch process is much more clean-cut. You start with coal, you make carbon monoxide and hydrogen from that, and you take those two gases and put them over a catalyst, and out of the other end of the process you get liquid fuel and gases. That is the so-called Fischer-Tropsch process. That is much more clean-cut and cheaper than coal hydrogenation.

As I mentioned earlier, we are working on a phase of it now which we think is going to bring the cost down substantially.

Mr. CHENOWETH. What do you think of this underground-gasification process?

Mr. COREY. I think very highly of it from the standpoint that it affords us a possibility of recovering coal that cannot be economically mined, very thin seams, very poor-quality coal. The British are going at this matter very intensively. They have a tremendous program. As a matter of fact, they have an underground-gasification project now which they are going to start and build a powerplant on the site, take the gas from underground gasification, put it in the powerplant, and generate power. It is a demonstration plant.

Mr. CHENOWETH. We are not that far along?

Mr. COREY. No, sir.

Mr. CHENOWETH. I think that is all, Mr. Chairman. It is very interesting. Thank you, Mr. Corey.

Mr. COREY. Thank you.

Mr. SAYLOR. Thank you, Dr. Corey.

My next witness is Mr. Walter Lloyd. He is manager of coal traffic research and development for the Pennsylvania Railroad.

STATEMENT OF WALTER L. LLOYD, MANAGER, COAL TRAFFIC RESEARCH AND DEVELOPMENT, PENNSYLVANIA RAILROAD

Mr. LLOYD. Mr. Chairman, members of the committee, in behalf of the Pennsylvania Railroad, I wish to express appreciation for the opportunity of being heard here today in favor of H. R. 400.

Mr. Saylor, I wish to compliment you on this legislation and the members of the committee for the vigor in which you are progressing.

I also wish to advise that the major coal-carrying railroads, when we learned of this proposed legislation, set up a group, under the organization of the American Association of Railroads, of law and traffic officers to sit down and try to decide where we might fit into this picture and how to cooperate with you.

Our chairman, Mr. William M. Moloney, will make a statement at your Washington meeting, which I understand is a summary meeting of these various hearings.

In view of the importance of this proposed legislation to the mining regions, in which the Pennsylvania Railroad has a vital interest, I desire to present several observations in support of H. R. 400.

The long historical relationship existing between the coal and railroad industries, together with their present and future importance to the national economy and to national defense, are established facts.

The growth of the Pennsylvania Railroad was based mainly on transporting coal from mine to markets. Today $350 million are invested in our equipment and facilities to handle coal.

Our faith in coal's future is evidenced by recent large expenditures on hopper cars and locomotives—$32,600,000 in 1956. Our 1957 budget is now being set up to purchase 2,700 new hopper cars, 53 new locomotives, and to rebuild 14,000 hopper cars.

Our position is much the same as the coal industry, inasmuch as our level of profits have not been too satisfactory. We took in about a billion dollars in 1956, of which we netted $41½ million, paid taxes of $72 million. And you can see this expenditure on equipment just for coal alone of $32,600,000 was quite a bit of the money available to the man who makes up the budget for us.

But our faith in coal is there. We feel that we have a responsibility to serve this industry and to make just as much equipment available as we can. Our program calls for more efficient use of the equipment.

We know that last year we were not able to meet all the demands on equipment in the peak season, those months from May through October. We hope this year to do a better job than last year, and last year's job was better than the year before because we planned. Our transportation got the best turns possible out of the hopper cars. But that thing of having equipment available more or less on a standby basis for 5 months of the year to meet 7 months' operation is a pretty difficult problem. And we have to plan our activities to keep increasing the efficiency in terms of these cars.

We fully appreciate the importance of coal research, which will assure a stable and prosperous coal industry, which in turn will assure a return on our large investment in coal facilities.

The Pennsylvania, as well as the other coal-hauling railroads, have for years sponsored coal research programs, both financially and by the assistance of their personnel. A recent project was the coal-burning gas turbine locomotive, to which we contributed $1,181,000 and the time of our engineers. Needless to say, we are hoping for the early success of this project.

There is no one that would like to see the success of that project better than the Pennsylvania Railroad because of our large interests in the coal territory, and because of the increasing costs of diesel fuel. We think that coal is the cheapest source of energy, but we were not able to continue with the steam locomotive because of its overall lesser efficiency compared to the diesel, about a 4-to-1 ratio.

Also, the efforts of our coal traffic personnel are continuously directed toward holding and expanding coal's markets. The recent establishment of my new position as manager, coal traffic research and development, with the responsibility of expanding coal's markets, is evidence of the importance attached to coal research by our management.

The vast future growth in the total energy demands of our Nation, as well as the world—and we have kind of passed over the export market here today. This export market is really the mainstay and the thing that has made the coal industry prosperous in the last 2 years. It dictates that if coal is to obtain its proper share, new approaches must be applied to all the complex technical phases of coal mining, preparation, and utilization.

We are convinced that the most productive effort can be obtained from an expanded fundamental research program.. It is in this area that Federal support would be quite proper in conserving, developing and utilization of this important natural resource.

It is for this general purpose that the Pennsylvania Railroad favors H. R. 400 with the recommendation that the Government assist and the Federal funds should be directed toward research to develop fundamental data, such as geological studies of the occurrence of coal, its nature, its origin and composition, its extent and quality; mine water control and stream pollution studies; mining preparation and utilization studies; coal chemicals and synthetic fuel studies, and so forth.

As to the transportation of coal from mine to market, the railroads oppose the expenditure of Federal funds for researching competitive transportation methods.

We feel that this phase should be left to the transportation agencies themselves as there are presently many inequities of Federal and local transportation policies which provide subsidies to our competitors, thus making it increasingly difficult for the railroads to operate, as their competitors take an increasing share of high revenue traffic, and in many instances cause the railroads to operate on a lesser volume or on a standby basis.

In conclusion, I would like to state that the Pennsylvania Railroad considers this legislation most timely, as a correlated research program on a broad basis is urgently needed to assure a stable and prosperous coal industry. The Pennsylvania Railroad will welcome the opportunity to cooperate fully with this committee in any matter it may see fit.

Mr. SAYLOR. Thank you for your statement, Mr. Lloyd.

I think you were in the room this morning when railroads, not by name but by occupation, were taken to task for their failure to be in a position to meet the needs of the coal industry in this area in particular. I think we ought to give you this opportunity to say anything that you want to in defense of the railroads, since you are the only witness we have from the railroads themselves.

Mr. LLOYD. Thank you.

That is the tough problem that our management is facing: Where to get the funds to buy the necessary equipment for the expansion of open-top commodities. All open-top commodities are expanding: iron ore, limestone, as well as coal.

We know where we are going, we know about what the business trends are. We are doing a great deal more research in the railroad circles than we ever have. We know how many cars we need and how many locomotives, but the amount of dollars involved in an industry such as ours, with our low profits, has been the main focal point of concern.

We are spending every bit of money that we possibly can toward the open-top equipment problem.

On top of that, we are setting up our railroad organization in a manner that will bring about all of the efficiencies possible to get a quicker turn of the cars.

As I mentioned before, great progress was made last year. If it had not been for the steel strike, I do not think we would have had any critical shortage at any time last year, but that completely upset our railroad because, as soon as steel shut off, we had to curtail all of our operations toward the maintenance of hopper cars and service personnel. So it was several months after the peak load hit us before we could bring our efficiency up again.

This year we hope to go through without those difficulties, and if so, I do not predict we will have any serious difficulties.

Further, our export program grew on us without any planning. We had an awful time with equipment at the ports, as much as 15 to 20 days getting hopper cars unloaded.

This year we have a program—I am in charge of the coordination of that program—whereby we will plan the activities of classifying the coal trains and moving them to certain staging areas and not have them down in the throat of operations when boats are available and plugging it in that manner. So that, with the planned attack on the export job, we are not going to have delays to equipment in the port areas.

All of those things are a feature to this local car supply job, and I can assure all of the coal-mining people here today that that is foremost in the minds of the management.

Mr. SAYLOR. I can tell you, Mr. Lloyd, last year I did not know whether I was working with coal companies or railroad companies, because I think I spent half my time, at least for a certain period of the year, calling on behalf of various people to find out where coal hoppers were that were supposed to enable men to go to work, that those companies had orders they could not fill.

I know you are familiar with those problems, and I am delighted to know that there is some progress being made toward the solution of them.

Mr. EDMONDSON. Is there any measurable competition for the railroads in the hauling of coal by trucks?

Mr. LLOYD. Yes; the trucks have been taking an increasing share of the short-haul business, increasing rapidly. With the bigger trucks and the superhighways, they have really been rolling a large tonnage, and the tonnage is continuing to grow.

Mr. SAYLOR. Mr. Dawson, do you have any questions?

Mr. DAWSON. Yes.

Are the competitors you were referring to when you mentioned competitors, primarily the trucks?

Mr. LLOYD. Yes.

Mr. DAWSON. Why do you consider the pipelines as competitors of yours?

Mr. LLOYD. Anything that would take coal off of rails is a competitor. Of course, we have such a large part of our investment in the coal facilities that we watch all of those situations very carefully.

As far as the pipeline goes, we are very much interested in pipelines, because we have to be frank and factual about the situation with an investment like that. If it would appear that is the way to move coal, that is the economic way to move it, we would have to probably get into that business.

Mr. EDMONDSON. Do you think that Government research into liquefying coal for transportation is undesirable from a competitive standpoint?

Mr. LLOYD. My view on that is that any phase of Government research that would get into the transportation field would be a type of research which we would not want to see Government funds sponsor.

Mr. EDMONDSON. Is it not possible that the development of liquefied coal would make it profitable to use your tank cars for transporting coal?

Mr. LLOYD. That is a job that will go to pipelines. I mean any liquefication of coal will move by pipelines mainly. Some of the byproducts from such processes would undoubtedly in small lots move by tank cars to certain processing or staging areas as they do today. But any volume of liquefied products would move via pipeline.

I see your point.

No; I think that is all still in the field of fundamental research when you are finding ways to break down the composition of coal, and that knowledge is needed, I think, by the Nation.

What I meant is that building of pilot stage pipelines or conveyors or means like that. This is an applied field in which I do not think Government funds should be used. The fundamental chemistry of making synthetic fuels is something that is going to progress, and the fundamental knowledge is needed.

Mr. EDMONDSON. If we could go along with some of the testimony earlier today regarding the future form in which coal will be used mainly, it would appear very possible that you would be moving a lot more coal by tank car in the future than you would be the present type of cars. That is getting into conjecture, I guess, but it still seems within the realm of possibility.

Mr. LLOYD. You may be right, but I do not see it that way, because when you liquefy coal, those products will be handled—if there is volume, the bulk will be handled by pipeline.

Mr. DAWSON. Will the gentleman yield?

Mr. EDMONDSON. I have no further questions.

Mr. DAWSON. I would like for the witness to amplify a little further the reply to Mr. Younkers, and also Mr. Ghizzoni, whose statement Mr. Younkers presented. On page 2 of his statement, he makes this comment:

> Coal has for a long time suffered because of transportation problems such as inequitous freight rates which have in many cases exceeded the price of coal at the tipple or pit-head.

Is that getting a little far afield?

Mr. LLOYD. That is a little far afield.

Mr. DAWSON. You should give your answer for the record because this previous statement is in the record.

Mr. LLOYD. That is right, but that is a complex subject. A short answer would be completely too vague to express anything on that.

We think the freight rates are the cheapest transportation for bulk commodity handling, but I would rather not discuss freight rates at this hearing, which is something that is discussed mainly before the Commission.

Mr. DAWSON. Let's pass on to an easier one then.

Here is another statement:

> And the railroads were allowed to have large unfilled paper orders for new cars without any hope of early fulfillment.

If I remember, Mr. Younkers went on further to explain the purpose of that was so that the railroads could get a tax writeoff by reason of having cars on order.

Mr. LLOYD. I have been very close to that, as I was chairman of our hopper-car committee last year. I know what all of our purchasing programs were. I know what all of our estimates as to equipment needs were, both motive power and cars. I know what our orders were, and I cannot agree with that statement.

We ordered up to the ability of our moneys to pay for them, and we had received all of those orders in 1956, and we now have placed new orders, and we expect receipt in 1957.

We would like to buy some more cars, but we just do not have the money.

Mr. DAWSON. I am a little concerned with your statement that you do not want any of these moneys spent for investigating the problem of transportation. If the same attitude were taken by all other groups who might be affected by this question of research, then there would be no program at all because, just as logically, the shale-oil people could say, "We do not want you to investigate this matter because you are going to develop something that will be in competition to shale oil."

The natural-gas people might make the same argument, and say, "Don't touch anything that is going to affect our industry."

As far as I am personally concerned, I would prefer to see the Government out of this experimental research field as much as possible and see the money diverted to the universities and research organizations, people of that type, with the possible exception of long-range research that is not going to be of any immediate benefit to the industry.

But you would object, as I understand it, to taking these moneys and giving them to private organizations to go into the investigation of transportation problems. Would you not?

Mr. LLOYD. I would. Speaking for the railroad, we would object to any Federal funds going into the researching that would benefit competitive transportation. There are many fields in which we would like to have Government money to research the very many problems that we know that we could lick if we had the money to research them.

We feel that the subsidized transportation today is actually hindering railroad progress. We know that railroad movement of volume traffic is the cheapest method of doing it.

Mr. DAWSON. Who do you refer to by "subsidized transportation"?

Mr. LLOYD. Mainly trucks and barge and airline travel are heavily subsidized by present policy.

Mr. EDMONDSON. Could we not say that all methods of transportation are subsidized, either currently or previously, in their operation?

I mean there has been a Government subsidy program in connection with practically every form of transportation at one stage or another of its development.

Mr. LLOYD. That statement in its broader sense is right.

Mr. EDMONDSON. I think some of these other competitors of yours are hitting the till a lot heavier now than the railroads are.

Mr. LLOYD. In today's transportation, yes.

Mr. EDMONDSON. In today's situation.

Mr. DAWSON. When the Union Pacific came to Utah, they were given every other section, if I remember correctly, along the right-of-way for bringing the railroad in, developing the country. They still hold many of those lands today, and some of them are very valuable oil lands.

If I remember the briefs that we have received from the Truckers Association, they contend that the railroads are subsidized in one form or another. And the railroad people say the airlines are subsidized. But it depends on who you talk to as to who is getting the subsidy.

Mr. LLOYD. That is correct. But there are a lot of facts that have been presented which show the inequities that do exist today, and that is the point we are making: that we do not want to see the spread of Government subsidies in competing industries.

Mr. DAWSON. In other words, what you are saying is you do not want them to take this tax money away from you and study methods to help your competitor?

Mr. LLOYD. That is exactly right.

Mr. DAWSON. That is all.

Mr. SAYLOR. Mr. Chenoweth.

Mr. CHENOWETH. As I understand, Mr. Lloyd, coal has been an integral part of the growth and development of the Pennsylvania Railroad. Is that right?

Mr. LLOYD. Its lifeblood. Today also.

Mr. CHENOWETH. It is still one of your important revenues?

Mr. LLOYD. One-fifth of our revenues.

Mr. CHENOWETH. One-fifth of your revenues?

Mr. LLOYD. Yes.

Mr. CHENOWETH. Of course, then you would be very much concerned over anything which would increase the production of coal and therefore require transportation of coal?

Mr. LLOYD. Yes.

Mr. CHENOWETH. You say the increase in the production of coal now is due largely to the export business. Is that right?

Mr. LLOYD. The increase of the last 2 years has been mainly accelerated by the export program.

Mr. CHENOWETH. How much coal has been exported out of this area?

Mr. LLOYD. Out of this area it has been small. We are now in the throes of trying to find a way to do a better job.

Mr. CHENOWETH. Do you get any export business out of here?

Mr. LLOYD. Yes, definitely. You mean in tonnage?

Mr. CHENOWETH. Yes, anything.

Mr. LLOYD. I do not know what the other railroads did in this area, but I would say this area last year exported around a million tons.

Mr. CHENOWETH. Around a million tons?

Mr. LLOYD. Of bituminous coal.

Mr. CHENOWETH. Right out of this area?

Mr. LLOYD. Yes.

Mr. CHENOWETH. You did pretty well then in this area. We did not get any business at all in Colorado. We tried but could not get any. You did pretty well here.

Mr. LLOYD. It is a matter of geography.

Mr. CHENOWETH. Did you have ample cars to take care of that business?

Mr. LLOYD. It was a struggle. Throughout the latter part of the year following the steel strike, it was a real struggle to get cars.

Mr. CHENOWETH. I have heard the complaint made since I have been here that some mines can only operate 2 or 3 days a week, which would otherwise operate 4 or 5 days, because they cannot get the cars to haul the coal. Is that true?

Mr. LLOYD. That was correct in some weeks. We used the car supply to the best advantage of everyone.

Mr. CHENOWETH. What were you doing with the cars?

Mr. LLOYD. They were loaded.

Mr. CHENOWETH. Where?

Mr. LLOYD. Because of the demand for the cars——

Mr. CHENOWETH. Was this export business taking those cars?

Mr. LLOYD. It was in small factors. They were loaded with all types of commodities. That is, there has been a very steady increase in the open-top commodities, so that in the peak period of last August, September, and October, the demand on those cars was more than they could meet. So we had to make an equal distribution to all mines, and some mines did work short time this week, were all right the next week, and the following week might not be.

Mr. CHENOWETH. When did you start to have this trouble with the cars?

Mr. LLOYD. It has been more or less car shortages throughout any of the peak coal loading periods, I would say, in the last 5 years.

Mr. CHENOWETH. The coal output has been decreasing steadily over the years up until the last year or two now.

Mr. LLOYD. That is correct.

Mr. CHENOWETH. You still had a car shortage even with the decreasing output?

Mr. LLOYD. We had no car shortage in 1954 when the coal market got to a low ebb. We had a surplus through what is normally peak period, if I recall correctly, of about 16,000 cars a month standing on sidings. That was 1954; 1955 and 1956 were good years, and we had tight situations. It all depends on the market.

When coal is good, normally the rest of the economy of the Nation is good.

Mr. CHENOWETH. Coal is an integral part of the economy here, is it not?

Mr. LLOYD. That is right.

Mr. CHENOWETH. If something happens that keeps the coal mines working only a day or two a week, that is a pretty serious handicap to overcome, is it not? That is the charge they are making against the railroads here.

Mr. LLOYD. That is right.

Mr. CHENOWETH. Is that justified?

Mr. LLOYD. Certainly it is justified, and we cannot meet their needs. But the railroad has their problems that they cannot always have equipment to meet the peak load conditions.

Mr. CHENOWETH. Is there any place you could borrow equipment from other railroads? Could the western railroads help you out? Maybe their peak is not quite as heavy.

Mr. LLOYD. Our management endeavored to borrow locomotives and cars from anywhere in the United States. We were successful in some instances. In fact, last year we used 11 locomotives from the Missouri Pacific, which normally operates down around Texas. We were operating them on coal trains. This winter we are using a great many cars from the iron ore-carrying roads up in Minnesota. We are now using them to haul ore from the east coast to the Pittsburgh district. So that we are exchanging equipment between roads and doing everything possible to try to meet these demands.

It is all a matter of dollars. A hopper car costs $8,000 today, whereas not too long ago it was $4,000. So you buy 10,000 hopper cars and you have invested $80 million. The railroads are finding their cash position more difficult each day, and they are having more difficulty in borrowing money. Interest rates have gone up to the point where it is almost prohibitive to go out and get money to build this equipment.

Mr. CHENOWETH. You are getting some rate increases to offset those, are you not?

Mr. LLOYD. We are endeavoring to keep our earnings up, but even with the rate increases granted we are lagging behind the rising costs as yet.

Mr. CHENOWETH. I am getting many complaints against these increased freight rates because it does have a vital effect on our economy. I am not critical of what the railroads are asking for, but a raise in freight rates affects everyone, not only the shipper, as he passes it on to everyone else.

Mr. LLOYD. The oil people came out and just raised the price of fuel oil to domestic users on the east coast 1 cent a gallon, which is

equivalent to about $2 in equivalent coal B. t. u.'s. Nobody kicks on increases like that.

Mr. CHENOWETH. I think there has been some kicking going on.

Mr. EDMONDSON. There is a lot of kicking on that. I guarantee you.

Mr. CHENOWETH. You said you ordered new cars and locomotives?

Mr. LLOYD. Yes.

Mr. CHENOWETH. What kind of locomotives?

Mr. LLOYD. Diesel.

Mr. CHENOWETH. You are not ordering any steam locomotives?

Mr. LLOYD. No.

Mr. CHENOWETH. Are you operating any steam locomotives now?

Mr. LLOYD. Yes, we are operating some steam locomotives, but it is on the decline continuously. In other words, there is no better piece of motive power on the market today than the diesel locomotive.

Mr. CHENOWETH. What is this new locomotive you are experimenting with?

Mr. LLOYD. That is a project that started with the railroads, the coal industry, and Bituminous Coal Research that Dr. Rose mentioned. That is a good example of too little money and too small a personnel organization. That project was started in 1945, and over those years the effort was just too small to bring about the development of that complex new type of locomotive power in those years. If there had been more money and personnel, we probably would have that locomotive working today.

Is that right, Dr. Rose?

Mr. ROSE. Yes, I think that is about so.

Mr. CHENOWETH. Do you think the Federal Government should have helped you in that?

Mr. LLOYD. There were many fundamental problems of coal handling in connection with railroads that could very well fit into such a program—the combustion, the separation of the fly ash from the gases that go into the turbine. All of those fundamental research problems could well have been aided by Government funds.

Mr. CHENOWETH. Do your motive power people feel they are really going to perfect that type of engine?

Mr. LLOYD. There is a difference of opinion. Many people feel it will be very successful. The reason that everyone likes it is it is such a simple machine that it will be easy to maintain. The gas turbine air-fired locomotive on the Union Pacific today is doing a grand job, and if we can just convert that same principle to coal burning, that type of motive power will push the diesels off the railroad pretty fast.

Mr. CHENOWETH. How close do you feel you are to a realization of that project?

Mr. LLOYD. I cannot answer that. We hope to get some enlightenment on that—I was just talking to Dr. Rose—at the April 19 annual meeting of Bituminous Coal Research. There we hope to hear from the engineers in charge of the project.

Mr. CHENOWETH. You have never actually tried out a locomotive of that type?

Mr. LLOYD. No. It is very close now to being ready to put the whole complex machine on wheels.

Mr. CHENOWETH. I think that is all, Mr. Chairman.

Mr. SAYLOR. Thank you, Mr. Lloyd.

Mr. LLOYD. Thank you.

Mr. SAYLOR. The next witness is Mr. R. T. Laing, executive director of the Central Pennsylvania Coal Producers' Association and Eastern Bituminous Coal Association.

STATEMENT OF R. T. LAING, EXECUTIVE DIRECTOR, THE CENTRAL PENNSYLVANIA COAL PRODUCERS' ASSOCIATION AND EASTERN BITUMINOUS COAL ASSOCIATION, ALTOONA, PA.

Mr. LAING. Congressman Saylor, Mr. Chairman and members of the committee, I want to express on behalf of the coal operators in central Pennsylvania our gratitude and appreciation for your interest in the coal industry. We are glad you are here and we hope we can add something to your purpose.

The gentleman from Utah said he had such cheap gas up there. I just wondered if our good friend Bert Manly had anything to do with it.

Mr. DAWSON. He certainly did. He battled the case interests for quite some time.

Of course, we produce a lot of natural gas in my area and a lot of coal also, so we have conflicting interests. We had a great deal of the market up in the Northwest around Seattle for our coal, and then we went to work and piped the natural gas up to them, so we beat our coal producers out of their best market. Perhaps we are our own worst enemy out there. I do not know.

Mr. LAING. The coal industry cannot afford to lose too many fellows like Bert.

My name is R. T. Laing. I am executive director of the Central Pennsylvania Coal Producers' Association and Eastern Bituminous Coal Association, with offices in Altoona, Pa. The members of our associations, 56 operators in a 20-county area, produced 15,769,754 tons of bituminous coal in 1956 and represent 43.2 percent of the 36,534,791 tons produced in the central Pennsylvania area. The industry representatives in this area appreciate the concern of the National Congress in our welfare and particularly the active interest of this subcommittee.

We are grateful to Congressman John Saylor who introduced the legislation under consideration and who, we know from long experience, is motivated in this activity by a profound desire to contribute to a sound program for the coal industry which is so vital to the economy of this area and so extremely important to our national defense and general welfare. We hope this motivation will prove contagious and spread, not only through the legislative branch of our national Government, but to all branches that have to do with solid fuel and its importance in our national welfare. We who are actually engaged in the industry know full well that coal is our most abundant fuel and any program, including research, that has for its purpose the guaranty of an adequate supply and sound utility is commendable indeed in relation to our national defense and welfare.

The normal growth of our country will require a tremendous increase in fuel in the future. Energy experts and coal economists estimate that we will need 1 billion tons of coal in 1975 to meet our peacetime objectives. National emergencies would necessitate a

decided revision upward of this estimate. For these reasons we must keep the industry on a sound basis. Past experiences in times of emergency have registered the fact that coal, because of its abundance and flexibility, is the most dependable fuel.

Although the general picture of our industry has been better over the last few months, we have experienced little relief in our area. As shown by exhibit A, our production has shown a steady decline since 1947. Between 1947 and 1956 many of our mines have been closed and as exhibit B shows, thousands of our men have been thrown out of work. The closing of the mines is a deplorable error because in most cases a valuable national resource is forever lost. Since coal is so important to our national economy, conservation should be one of our objectives.

The coal industry is research-minded but, because of the great number of small companies and the narrow profit margins, it is impossible to create large funds for this purpose. The moneys contributed by other fuel industries with fewer units, larger profits and more generous depletion allowances make our program seem insignificant. However, when equitable comparisons are made, our industry shows commendable progress. In 1955 approximately $17 million was expended on coal research of which amount the coal industry itself made the major contribution. Our association is presently sharing the cost of a program at Pennsylvania State University and many of our members are contributing to other agencies in the field of research. We have done this over a period of years. The Pennsylvania Legislature, realizing the importance of coal to the economy of the State and the welfare of the Nation, in 1956 appropriated $500,000 for research in the field of bituminous and anthracite coal. The expenditure of this sum is restricted to a great extent and cannot be used in all phases of research. We hope the Federal Government will initiate a program that will be broad in its intent and purpose.

To this statement we have attached exhibits showing the tonnage, manpower and production per man per day in our area since 1947. This picture is not pleasant to look upon when consideration is given to exhibit D which shows our present reserves. Situated as we are in close proximity to the eastern seaboard, the figures on exhibit A should be just the opposite.

The solution of our problems in central Pennsylvania can be found to a great extent in research. We will continue as an industry to contribute to this program and will encourage participation by other groups. We feel, however, that the Federal Government has a vital interest in maintaining an adequate and ready fuel supply at all times. We, therefore, urge the enactment of legislation to this end.

Although we cannot give specific details as to the manner and method of research programs, we believe the following broad fields offer unlimited opportunities for protection and development of the coal industry:

I. DEVELOPMENT OF NEW MINING MACHINERY AND IMPROVED METHODS OF PRODUCTION

The coal seams in our area are thin, ranging from 2 to 5 feet. Development of continuous mining machines that could operate effectively in our thin seams would afford an opportunity for equitable

competition with other fuels and the thick-seam production of our western neighbors.

II. PREPARATION

Because of the change in burning equipment in the last few years, consumers have widened the variety of their needs. Modern plants are very efficient and versatile. The coal industry must be prepared to adjust its production to meet the requirements of these plants at all times.

III. MARKETING AND MARKETS

Because of changes in burning equipment and influx of other fuels, the coal industry has lost many of its markets. A research program that would survey markets to determine where coal could be used to conserve more critical fuels would be profitable. A program that would modernize the marketing practices now current could be included in this phase. This study could very well apply to foreign as well as domestic markets.

IV. IMPROVEMENT OF CURRENT METHODS OF CONSUMPTION AND DISCOVERY OF NEW USES

The loss of markets to other fuels in many cases was due to lack of knowledge of burning equipment. The coal industry failed to keep pace in modernization programs. A thorough investigation in this field could result in the reconversion to coal. Programs already in progress are aimed at bringing the railroads back to coal. Since the making of steel requires great quantities of coal, a program that would have for its aim a better product for this purpose would undoubtedly reduce end costs.

V. NEW USES

Scientists tell us that the chemical composition of coal is such that with expanded research programs many new uses could be found. We know that liquid fuel and gas can be manufactured from coal—our problem is to do it economically. We also know that gasification of coal underground is possible, but at the present time impracticable. We know also that coal is being utilized to a considerable degree in the field of chemistry. Any research program that would study, investigate and enlarge these areas would certainly be worthwhile.

In this presentation we have, without being specific, mentioned a few areas where we believe a sound research program would benefit the coal industry and strengthen the security of our Nation. Because of lack of technical knowledge we cannot be specific. However, we believe the above-mentioned areas are fertile fields for investigation. We are convinced that something must be done to save this valuable resource in our area from being wasted. We heartily endorse the proposed legislative program and recommend its adoption.

VI. TRANSPORTATION

Although this subcommittee is primarily concerned with research to develop additional markets for bituminous coal, we feel such a program should also include the adequacy and the cost of transportation services available for its movement to market. Approximately

90 percent of the coal produced in central Pennsylvania is transported by railroad to its natural eastern markets.

The coal industry in central Pennsylvania is laboring under a level of coal rail rates which we believe are unlawfully too high. Since 1946 bituminous coal rates have been increased a maximum of $1.70 per ton—another increase is pending. During this same period the f. o. b. mine price of coal has advanced only $1.41, this in face of an increase of $10.40 a day in miners' wages, which is in excess of $1 a ton in our area. When applying to the Interstate Commerce Commission for authority to raise coal rates, the railroads claimed they needed additional revenue to provide adequate and efficient transportation service. Yet the coal operators in central Pennsylvania do not have adequate or efficient transportation service. The fact is that coal production in this area for the past 2 years has been held to a minimum because of the lack of sufficient serviceable hopper cars and motive power to move the coal to market. We understand a contributing factor to high coal rates is deficits in certain other operations of the railroads, such as passenger service.

Due to the lack of navigable waters in our area, we are tied to the rails. Also, because of our geography, it would be impracticable to build a pipeline, such as the one built by the largest coal producer in the country to transport coal to a substantial market area.

Therefore this subcommittee might well recommend a thorough investigation of our transportation facilities aimed at discovering means of providing more efficient transportation at lower costs. The subcommittee also might recommend a study of the feasibility of constructing powerplants at the coal source to determine whether it might be more efficient and less costly to transport electricity than ship coal.

(The tables attached to Mr. Laing's statement follow:)

THE CENTRAL PENNSYLVANIA COAL PRODUCERS' ASSOCIATION, ALTOONA, PA.

EXHIBIT A.—*Production and operation statistics for bituminous coal in eastern Pennsylvania, 1947 to 1956, inclusive*

Year	Deep mines		Strip mines		Total mines	
	Net tons	Percent change over previous year	Net tons	Percent change over previous year	Net tons	Percent change over previous year
1947	41,067,673		18,461,242		59,528,915	
1948	37,854,914	−7.8	19,472,128	+5.5	57,327,042	−3.7
1949	25,123,928	−33.6	13,438,977	−31.0	38,562,905	−32.7
1950	30,067,119	+19.7	15,703,707	+16.9	45,770,826	+18.7
1951	31,179,755	+3.7	14,961,368	−4.7	46,141,123	+0.8
1952	26,141,217	−16.2	13,652,875	−8.7	39,794,092	−13.8
1953	23,885,883	−8.6	12,853,860	−5.9	36,739,743	−7.7
1954	16,951,891	−29.0	11,731,623	−8.7	28,683,514	−21.9
1955	20,321,841	+19.9	13,217,680	+12.7	33,539,521	+16.9
1956 [1]	21,857,725	+7.6	14,677,066	+11.0	36,534,791	+8.9
1956 versus 1947–49 average		−37.0		−14.3		−29.5

[1] Preliminary.

Authority: Years 1946 to 1953, inclusive, U. S. Bureau of Mines: years 1954 to 1956, inclusive, Pennsylvania State Department of Mines.

EXHIBIT B.—*Number of employees for eastern Pennsylvania*

Year	Deep mines		Strip mines		Total mines	
	Net tons	Percent change over previous year	Net tons	Percent change over previous year	Net tons	Percent change over previous year
1947	38,841		7,570		46,411	
1948	40,085	+3.2	8,577	+13.3	48,662	+4.9
1949	37,376	−6.8	7,612	−11.3	44,988	−7.6
1950	34,065	−8.9	7,936	+4.3	42,001	−6.6
1951	30,426	−10.7	6,506	−18.0	36,932	−12.1
1952	27,407	−9.9	5,812	−10.7	33,219	−10.1
1953	23,589	−13.9	5,219	−10.2	28,808	−13.3
1954	18,053	−23.5	5,264	+0.9	23,317	−19.1
1955	16,615	−8.0	5,101	−3.1	21,716	−6.9
1956 [1]	15,421	−7.2	4,206	−17.5	19,627	−9.6
1956 versus 1947–49 average		−60.2		−46.9		−58.0

[1] Preliminary.

Authority: Years 1946 to 1953, inclusive, U. S. Bureau of Mines; years 1954 to 1956, inclusive, Pennsylvania State Department of Mines.

EXHIBIT C.—*Average tons produced per man per day for eastern Pennsylvania*

Year	Deep mines		Strip mines		Total mines	
	Net tons	Percent change over previous year	Net tons	Percent change over previous year	Net tons	Percent change over previous year
1947	4.51		12.87		5.65	
1948	4.35	−3.5	12.15	−5.6	5.56	−1.6
1949	4.41	+1.4	11.70	−3.7	5.63	+1.3
1950	4.75	+7.7	11.54	−1.4	5.95	+5.7
1951	4.89	+2.9	12.34	+6.9	6.08	+2.2
1952	5.01	+2.5	12.36	+0.2	6.29	+3.5
1953	5.40	+7.8	12.44	+0.6	6.73	+7.0
1954	6.03	+11.7	11.20	−10.0	7.44	+10.5
1955	5.88	−2.5	11.56	+3.2	7.29	−2.0
1956 [1]	6.40	+8.8	13.68	+18.3	8.14	+11.7
1956 versus 1947–49 average		+44.8		+11.8		+45.1

[1] Preliminary.

Authority: Years 1946 to 1953, inclusive, U. S. Bureau of Mines; years 1954 to 1956, inclusive, Pennsylvania State Department of Mines.

EXHIBIT D.—*Recoverable reserves as of Jan. 1, 1956 for eastern Pennsylvania*

County	*Net tons*
Armstrong	2,208,723,714
Blair	27,394,174
Cambria	2,584,754,169
Centre	266,443,995
Clarion	1,229,106,362
Clearfield	2,159,749,476
Clinton	44,112,943
Elk	298,292,773
Bedford, Fulton and Huntingdon	181,764,774
Indiana	3,698,365,527
Jefferson	1,920,386,199
Bradford and Lycoming	62,028,828
Cameron and McKean	309,557,553
Somerset	3,541,901,459
Tioga	42,256,400
Total eastern Pennsylvania (based on 1955 production 554 years' supply)	18,574,838,346
Total State of Pennsylvania (based on 1955 production 489 years' supply)	40,901,848,936

Mr. LAING. At this time I would like to introduce four bona fide operators from our district who are actively engaged in the coal industry and go down into the bowels of the earth and really do the mining. I would like for them to give you the picture.

First I would like to introduce Richard Todhunter. Richard Todhunter is the chairman of our research committee in our association. He is the vice president of the Barnes & Tucker Coal Co., one of the large operators in this area. I am sure he is familiar with the problems confronting the industry in our area and to some extent nationally. I think we are going to talk principally about central Pennsylvania in our presentation. Mr. Todhunter.

STATEMENT OF RICHARD TODHUNTER, VICE PRESIDENT, BARNES & TUCKER COAL CO.

Mr. TODHUNTER. Mr. Chairman, I did not know I was going to be called as a witness until after I arrived here, so I am going to make my remarks just off the cuff.

I have been here since the start of your hearing today, and most all of your witnesses have surprised me very much to the extent that they have pictured the coal industry as a very rosy picture.

Being born and raised in the coalfields, I know little other than coal mining, and know that this coal industry is a vicious cycle, either a famine or never a feast, and know that there have been many hard times within our industry because of lack of places to sell our product.

Also, being burgess of a small town of around 3,800, which used to be 5,000, I know pretty well the concensus of opinion of the people in this district, especially in the small coal-mining towns.

The average worker on our payroll is approximately 44 years old. The older miners who have spent their lives in the mines are not too anxious for their sons to follow their footsteps because they know, through their bad experience, that the coal industry is not a stable industry. Therefore, the younger generation are not too anxious to follow in their fathers' footsteps.

There is talk and our experts say maybe in 1975 there will be a demand for maybe a billion tons of coal annually. It is surprising to me to hear this today, when I dare say that last week in this immediate district there was unconsigned loaded railroad cars at the coal mine sidings. I know in our particular operation we loaded 915,312 tons last year. Last week we did not know we were going to work 5 days until Thursday. Coal orders are falling off. I also know that this week we are only sure so far of getting 4 days in a normal 5-day week.

I also know, with intimate relations with other mine operators in this district, that there are very few companies today with the rosy picture as they say.

Most of the coal companies in this district are losing money at this time because they are not getting the price for the coal that they should to cover their labor costs and the rise in material costs, and also to pay for this continuous miner that one of the witnesses talked about this morning, coal moles, and so on, for which you pay somewhere in the neighborhood of $100,000 each. And you are forced to mechanize to stay in business, to get more tons per man. You must realize too that you have to pay for those machines.

The Government does not permit us to amortize those in such a way as competitive industries. We are not allotted the large percentage such as oil and gas, as I understand, around 27 percent.

Mr. DAWSON. May I ask a question at that point?

Mr. TODHUNTER. That is on oil and gas.

Mr. DAWSON. But you are allowed to depreciate?

Mr. TODHUNTER. Yes, we are, but in a smaller way than they are.

Mr. DAWSON. You are comparing depreciation with depletion allowance.

Mr. TODHUNTER. That is right. We have set up depletion allowance and taken off so much for machines every year, and we hit into these low peak years and it really hits us hard.

Also, being active in civic affairs in our small town, I have tried to get other industries interested in coming into our field. One of the most important things—the first thing they ask for is good water. The coal mines, as you gentlemen know, have put sulfur into most of our streams, so we are licked there.

Being farther away from the main-line railroad and the main roads, our transportation problem there is considerable. Most of them want trucking, and some of the industries we have contacted and asked to come in want trucking.

The problem of getting younger people to work: We do not have the work for them, and with the agreement that we have with our unions, in any layoff the man with seniority has the advantage of staying at work, which is right. But if we had enough market for our coal, and stable market, at a stable price, that we could open more mines and hire young people, our industry would be much better off.

I cannot see that the coal picture is as rosy as what these witnesses have presented.

Thank you.

Mr. SAYLOR. Thank you, Dick.

Before we ask any questions of Mr. Todhunter, I think, Mr. Laing, you have several other witnesses. Is that right?

Mr. LAING. Yes.

Mr. SAYLOR. Will you call them?

Mr. TODHUNTER. There is another thing I might add. In this district most of our higher coal is being exhausted, and what we have in this immediate district is mostly lower coal, anywhere from 20 inches down.

Mr. LAING. I would like at this time to present Jack Guyer. Mr. John Guyer is vice president of the Imperial Coal Co. They have operations in Cambria County and Indiana County. Mr. Guyer has been associated with the coal industry for a great many years, having at one time been with the Bureau of Mines. He also, like Mr. Todhunter, is right close to the mining business.

STATEMENT OF JOHN N. GUYER, VICE PRESIDENT, IMPERIAL COAL CORP., JOHNSTOWN, PA.

Mr. GUYER. Mr. Chairman and gentlemen, my name is John N. Guyer. I live in Johnstown, Pa. I am vice president of Imperial Coal Corp., with mines, as Mr. Laing pointed out, in Cambria, Ind.,

and also in Clearfield County, all of them in what is known as central Pennsylvania.

We are, of course, very interested in the research work at all times, but especially the work done by the Central Pennsylvania Coal Producers Association, the Bituminous Coal Research, and also the mining development committee of the Bituminous Coal Research.

In speaking of this matter of a rosy picture for the coal industry, I did not come prepared to give a statement either, but I would like to refer to the table in Mr. Laing's report. It has something interesting and points up the conditions in central Pennsylvania rather clearly.

At the top of the page, under "Deep mines," the year 1956, he showed our production from the deep mines as 21,858,000 tons. That was an increase over 1955, which in turn was an increase over 1954, which was the low year of 16,952,000. But even with the two increases since the low year in 1954, back as far as 1947 you will not find another year that was as low as 1956.

The strip tonnage in 1956 was 14,677,000, and you have to go back to 1951 to find a comparable year. That was 14,961,000.

Mr. DAWSON. In 1949 you had 13 million.

Mr. GUYER. Yes; that is right, it was 13 million. However, in the deep mines we had over 25 million.

Then on the last page of the table—Mr. Todhunter spoke of the coals that are remaining in central Pennsylvania and their being center, and also Dr. Charmbury, I believe, this afternoon referred to the coals remaining as being center, and also poor quality. This shows the reserves of eastern Pennsylvania, which is our central Pennsylvania field bituminous coal, and it shows about 554 years' supply. This is based entirely on tonnage. It is not based, however, on thickness of seam, and at least half of this is of such thinness that the present equipment that is being used would hardly work in those mines.

In fact—I do not have accurate figures on it, but I would estimate that at least 50 percent of it could not be worked with the present type of mining equipment. Therefore, it is very important that we have a research program that will look into the many facets of this industry of ours.

You have not only the mining of coal, you have the transporting of coal away from the mines, you have the machines that you use. Then you have the preparation of the coal after you get it out of the mine. You have safety matters that deserve some research consideration.

The machinery that is used, first, requires research, as was pointed out by Mr. Morrow and others today.

Then you have your transportation of the coal from the mines to the point where it is utilized, and then, of course, you have the utilization of the coal.

All of those, while they are related to the coal industry, are not all just coal company research problems. They relate to the allied industries also.

I believe that is all I have.

Mr. SAYLOR. Thank you, Mr. Guyer.

Mr. LAING. I would now like to present Dennis Kennan, general superintendent of the Sterling Coal Co. at Bakertown, Pa. He, too, has been engaged in the coal industry all his life. He was at one time mine inspector for the State of Pennsylvania, and now is general manager of Sterling Coal Co.

STATEMENT OF DENNIS KEENAN, GENERAL SUPERINTENDENT, STERLING COAL CO., BAKERSTOWN, PA.

Mr. KEENAN. Mr. Chairman and gentlemen of the committee, I have listened with a great deal of interest to the various witnesses this morning. Like Mr. Todhunter, I was somewhat surprised, as an operating miner, to know our industry was in such wonderful flourishing condition. I, like Mr. Todhunter, cannot agree. We had coal on our side track until Thursday this week.

As to the condition of the industry. It has been pretty hard for me to go over to my hometown of Portage and convince the people of Portage that we had a bright future in coal. In fact, it is very hard for me to go down to Johnstown, taking a strip 10 miles, with the Pennsylvania Railroad in the center, 5 miles on each side, extending about 30 miles in length, and tell any of those people that the coal industry is in good position, because it just is not.

I doubt whether there are 10 mines of any size in operation between Johnstown and South Fork and Gallitzin.

Mr. DAWSON. If I interpreted what these other witnesses were saying, they were not saying the coal industry was in good condition, but they were saying the future, as a result of prospects from research, were good.

Is that the correct way to interpret your statement, Dr. Rose?

Dr. ROSE. That is correct, the potential.

Mr. KEENAN. I was going to lead up to that. I think probably, too, it was asked whether the coal industry would flourish whether we had research or not, and I think the answer was yes.

What I was leading up to is that we are badly in need of a research program to insure steady employment as far as central Pennsylvania is concerned.

Cambria County as a whole has lost tremendously in tonnage and the number of miners employed. Our potential for the future is poor because we have nothing to offer the young man. We must have more employment, we must have more production, in order to get more mines in operation so we can bring young men into the industry to replace the miners who are naturally growing older and must, in the very near future, face retirement. Then where are we going to get miners?

If we had a national emergency today, we would have a pretty hard time getting miners.

Another condition that exists—mention of water flooding the mines was brought out this morning. I must agree that the anthracite is much more a serious problem than we have in bituminous. But we do have much valuable coal under water, and I think that we should have some research in order to dewater these mines and purify our streams to reduce the acid content so that we would have some means of assuring our national administration we would be in pretty good

position to supply them with the necessary fuel should a national emergency arise.

I think we have been dragging our feet as far as research is concerned.

I think it was brought out by Mr. Lloyd there has been some delay in the completion of the development of the coal-fired turbine, the electric-powered locomotive that Norfolk & Western Railroad some years ago started to experiment with. I think we have dragged our feet, and we do need financial assistance. I think we need the Federal Government's backing in the development of locomotives of this type so that they, too, will give we operators and miners an opportunity to put our very basic and important fuel on the market.

That is about all I have to offer.

Mr. SAYLOR. Thank you for being here.

Mr. LAING. I would like at this time to present Mr. C. N. Creighton, Johnstown Coal & Coke Co., affectionately known to us as Shorty. While he is not a member of our association, he comes from an illustrious family of coal people who for a great many years were pioneers in this industry.

STATEMENT OF C. N. CREIGHTON, JOHNSTOWN COAL & COKE CO., JOHNSTOWN, PA.

Mr. CREIGHTON. Mr. Chairman, I know you are anxious to get away and my remarks will not take more than a couple of minutes, if that.

There are a couple of things I want to reemphasize. Some of my views may be a little at variance even with my fellow coal operators.

First of all, we in our company do not want any increase in Government spending. We think the Government is spending too much money now, and anything that is appropriated for coal research be obtained from some other source, in our humble view.

We are very much in favor of the research efforts. We think it is greatly needed. We agree that the industry has an optimistic future, but that is no guaranty that individual coal operators are going to stay alive.

We are mostly small independent coal companies in this section of the country that are completely dependent on our own wits to get by, make a dollar, and stay in business. And it is tougher all the time. There are companies going out of business every day, in spite of the optimistic reports of the future, and it will continue happening because we must have low cost and good price.

To get good price, we have to have a good product, with cheap mining cost and cheap preparation, and a lot of things.

Just a couple of more quick thoughts.

This research must be consolidated, in our viewpoint. The Bureau of Mines is doing some, Bituminous Coal Research is doing some, Penn State and other universities are doing some. All of which is wonderful work as far as we know, and constructive. If there was more money available, it would be even better for the industry. But in some way we must try to keep it consolidated or the same thing will happen to this research effort that has happened already in the coal industry.

One of the troubles with our industry is that we are completely disorganized. We have more different associations and groups in the coal industry than you have ever heard of in any other industry that

I know anything about. There are 15 different groups or associations to which we could belong.

This fact creates great duplication, unnecessary expense, since there are so many different organizations all doing the same thing. It is an internal problem for us coal operators. It is nothing we are asking you to do anything about, but maybe you can help in some way, since your great interest is in research, in keeping our research efforts consolidated.

Mr. DAWSON. Probably what you need is a John L. Lewis to get a cohesive organization.

Mr. CREIGHTON. We need some kind of a leader of that sort perhaps. We certainly must try to get the Untied Mine Workers to participate in this research program. We must invite them.

And if you people continue your interest, as we all hope you will, we hope maybe in some way through your efforts that can be accomplished.

One final word on the remarks of Mr. Morrow and Dr. Rose, which were so completely optimistic of the future.

I would like to reiterate that the individual operator has the problem of meeting the payroll and accomplishing the other things that the average business man has to do. There are several large companies in the coal industry—the so-called General Motors of the coal industry—which do very well, and we are all proud of them. Some of them indeed are engaging in research activities on their own. We smaller operators wish we could afford to do that, and the reason we have spent less as individual operators and have been able to participate to so meager an extent is that we simply have not had the profits with which to do it.

But we do need your help. Do not disband your committee just because of all the optimism you have heard today. Keep working for us if you will.

The defense angles have not been brought out too greatly today, and I do not think they could be emphasized too strongly.

I am thinking of railroad car supply for one thing. If we were to get into a war today, we would be in pitiful shape so far as our transportation system is concerned. I am not trying to get into an argument with our good railroad friends, but I think they will all agree that is true.

It may be there would be some way for the Government to assist the railroads, if you will, in providing a larger standby fleet of hopper cars, maybe through a revolving Government financing plan, or something of the sort. No new appropriation, but perhaps some one of these types of funds which I think the Government may be engaged in now.

Perhaps something could be worked out like that so we could have a more adequate car supply.

The railroads do have a money problem. We know that. But the shortage problem is really stifling at times.

Thank you for giving me the opportunity to appear.

Mr. SAYLOR. Are these all the witnesses you have here, Mr. Laing?

Mr. LAING. Yes.

Mr. SAYLOR. Mr. Edmondson, do you have any questions to ask of these four men who are in the actual business of producing coal?

Mr. EDMONDSON. There is one thing I would like to know.

Can it be assumed that each of the four producers you represent are participating in some way or other in a research and development program, either through BCR or through Penn State University, or something of that kind?

Mr. TODHUNTER. That is right.

Mr. EDMONDSON. Do the others agree?

Mr. GUYER. Yes.

Mr. KEENAN. Yes.

Mr. CREIGHTON. We are not presently participating in BCR.

Mr. EDMONDSON. Or the Pennsylvania State University?

Mr. CREIGHTON. That is right. We do a few other things of our own, but we are not participating in the university program.

Mr. EDMONDSON. I think Mr. Creighton might have an idea here for helping out on the car shortage, that is, if Government funds could be made available in a loan program to the railroads. I do not know whether Small Business Administration funds would meet that kind of a problem or not.

I know there was a time when we had the Reconstruction Finance Corporation that might have met that kind of a situation, but I do not know whether Small Business Administration funds would be adequate to the scale of the program we have need for right now or not. But I do think that is something that might be explored.

I want to thank you gentlemen for the fine statements that you have given us from the grassroots, more or less, on this problem.

Mr. SAYLOR. Mr. Dawson.

Mr. DAWSON. I would like to ask the other three gentlemen if they agree with Mr. Creighton that we should not have Government money to finance this research program.

Mr. GUYER. I do not know where we are going to get it if we don't have it.

Mr. CREIGHTON. I would like to clarify that. I do not think any new money. I think there are sources of money now that could be found within the present budget framework. I think other expenditures can be eliminated, and I think savings can be achieved to provide funds to do this.

I am not opposed to the use of some Government moneys in a general way. As a businessman, and aside from my interest in the coal industry, I am just opposed to any increase in the size of the Federal budget, and I think it is wrong for any business group to come in and ask for new moneys.

Mr. DAWSON. In other words, you want us to cut off this money we are sending over to our friends in Europe to work up research programs, and let us do it ourselves?

Mr. CREIGHTON. I think there are millions being spent in hundreds of places that could be reduced. Of course, I cannot sit here and criticize you men. I know the problem you have in trying to arrive at a proper level for Government expenditures. But I think our country is rapidly approaching the place where we have got to cut it down or we are liable to run into serious trouble.

I subscribe a little bit to the statements of Herbert Hoover and Secretary Humphrey, which warn that we will have a hair-curling depression one of these days if we do not curb inflation and reduce Government expenditures.

Mr. DAWSON. I wish you would expunge from the record that "little bit" part.

Mr. SAYLOR. Mr. Chenoweth.

Mr. CHENOWETH. I would like to ask Mr. Todhunter, what caused the upsurge in business the last couple of years, the increase to 5 million tons?

Mr. TODHUNTER. Export business.

Mr. CHENOWETH. Export business, exclusively, was it?

Mr. TODHUNTER. I would say you have had an increase in utilities, coal being burned for electricity, but I believe if the export business dropped off now, we would have chaos.

Mr. CHENOWETH. Are you getting some export business now?

Mr. TODHUNTER. We are getting very little.

Mr. CHENOWETH. There is some coming to this area?

Mr. TODHUNTER. Some.

Mr. CHENOWETH. Is that going to continue, do you think, as steady business?

Mr. TODHUNTER. According to the testimony we heard today, and other testimony I have heard and read, they expect it to continue. I do not know. I hear all these different things.

Mr. CHENOWETH. Where is that coal going?

Mr. TODHUNTER. I do not know. I think it is going to England, France, Holland, and Germany.

Mr. DAWSON. Will the gentleman yield?

Mr. CHENOWETH. Yes.

Mr. DAWSON. In our area of the country, we are shipping to Korea. The Navy has a contract to supply coal in Korea, and much of our coal from Utah is going there. You say you have none from Colorado.

Mr. CHENOWETH. You got it all, and we got none.

Mr. DAWSON. It probably is the quality of the coal or the freight rate.

But I have been trying to determine how long that program is going to go on. I have been trying to dig it out of the Department. I am having some difficulty in getting a commitment from them because it is classified information, but I do know we are getting some of that foreign market.

Mr. CHENOWETH. I know nothing about that.

As to the rosy picture ahead for the coal industry, like yourself, I was a little surprised to hear some of the statements today. However, I was very happy to hear them, because I want to see the coal industry come back.

I think your immediate problem is whether you are going to be able to stay in business until that time comes.

Mr. TODHUNTER. Whether we are going to be able to last that long, because right now, as other witnesses said today, and as Mr. Keenan said, we had unconsigned loaded railroad cars on our siding last week.

Mr. CHENOWETH. What are the immediate prospects ahead, leaving out the export business? How many days a week are you operating?

Mr. TODHUNTER. We have been operating five.

Mr. CHENOWETH. Are you going to hold that pretty well, do you think?

Mr. TODHUNTER. I do not know now. Last week they said no, and we did get the extra day. This week they say we are only going to get four, unless something else turns up. I cannot foretell the future.

I mean the immediate future, because even a couple of years ago nobody thought we would have the demand we have now, and we have had. It happened over a short period of time. It is just liable to drop off the same way. The history of the coal industry has been that. You have had a lot of orders, and then, bingo. The coal industry is the first one to be hit in a depression and the last one to get up.

Mr. CHENOWETH. There is a possibility that continued orders for utilities, export business, and steel demands will continue to increase and probably make a little brighter outlook for you than you can see at the present time.

Mr. TODHUNTER. It might. I do not know.

Mr. CHENOWETH. I am a little concerned about the statement I believe Mr. Guyer mentioned concerning the thin seams. Correction, and that your good coal is pretty well exhausted.

Did I understand that?

Mr. GUYER. The good seams, or thicker seams, are partially exhausted or tied up so that they hinder development.

Mr. CHENOWETH. Is it more expensive coal you are now getting out?

Mr. GUYER. Yes. Any new mines that would be open in virgin coalfields would be in this center coal I was referring to.

Mr. CHENOWETH. Are the operators staying in business pretty well through this area, or are some of the smaller ones having to give up and suspend operations?

Do you have as many as you had 10 years ago?

Mr. GUYER. I think Mr. Laing could answer that better than I.

Mr. LAING. I do not have the statistics, but they are folding up, small operators.

Mr. CHENOWETH. In other words, this increased tonnage was produced by some of the larger operators?

Mr. LAING. That is right.

If you refer to the exhibit in my statement and look at our tons—19 million tons in 1947, 36 million tons in 1956—we have just as much coal and the coal is being burned, but we are not supplying it in central Pennsylvania.

As I said when we came in, I want to talk about central Pennsylvania.

Mr. CHENOWETH. Who is getting the business?

Mr. LAING. A great portion is coming from the thick seams to the west of us, and that is why we need something done for the thin seams in central Pennsylvania. In the thick seams, perhaps they get 12, 13, 14 tons for the man. We are trying to dig out perhaps 6½ tons per day in our district. If the price of oil would go up, they will take some of our coal, but that is one of the things, the price of gas and oil, that keeps us out of the market. The boys in the West can mine considerably cheaper.

Mr. CHENOWETH. You have a problem peculiar to this area?

Mr. LAING. Center seams.

Mr. CHENOWETH. And high cost of production.

Mr. LAING. We have a good quality of coal.

Mr. CHENOWETH. But you have to compete with thicker seams elsewhere?

Mr. LAING. That is right.

Mr. CHENOWETH. That is one of your problems?

Mr. LAING. Yes.

If I can, I would like to reemphasize what Mr. Creighton said, which has not been emphasized here today, and that is the importance of the coal industry to the national defense. That is why I think Congress should get into it. I think it is the obligation of our National Government to look after the national welfare and the national defense.

In 1947 we produced 630 million tons of coal. That was our peak. Last year we produced 600 million. If we were called on today even to produce 630 million we would never reach it. All of the oil would be shut off if we had an emergency, the submarines and so forth, and we would not get oil from Venezuela, and if we depended entirely on coal, by George, we could not produce it, and if we could, the railroads could not haul it.

Mr. CHENOWETH. What do you think the Government should do?

Mr. LAING. I think they should find, through some method of research, a way to utilize this coal, and through research find some method to mine this coal economically and keep the mines at least in the shape they could produce if we get into trouble.

Mr. CHENOWETH. Do you feel the Pittsburgh laboratory of the Bureau of Mines is doing that now?

Mr. LAING. All of these agencies are doing a little bit, but it does not seem to be enough.

Mr. CHENOWETH. The State of Pennsylvania appropriated $500,000 for this work.

Mr. LAING. Yes, they realize the importance of coal to the economy of the State.

Mr. CHENOWETH. It looks like we have a number of private agencies doing this work now. I wonder if we need more.

Mr. GUYER. We need a coordinating agency.

Mr. LAING. We need more and more money.

Take our little individual program of central Pennsylvania at Penn State University. It runs around, I think, for the biennium, $130,000. That is not very much money, Mr. Chairman, in a picture like this. Of course, we are stymied because we do not have the money. If you give us 27½ percent, like you give the gas and oil people, to put in our pockets, we might be able to spend a little more money. We are working on 10-percent depletion. We just do not have the money.

They say you can make anything out of coal but dollars, and that is the experience in central Pennsylvania.

Mr. CHENOWETH. When did the depression in the coal industry start in this particular area?

Mr. LAING. 1947 was the best year, and you can see it continued on down from then and our low spot was in 1954, and then started up. It went down from 1947 to 1954, and started up in '55 and '56.

I think what Dick said is correct, that the principal reason for the rise has been the export business. Remember, we do not produce much of that export coal, but maybe some of the coal going to export left the market open for us.

Mr. CHENOWETH. I hope it continues to rise.

Mr. LAING. I do, too.

Mr. CHENOWETH. And that you have another good year.

Mr. LAING. Keep the price of oil going up and we will.

Mr. TODHUNTER. The question you asked on whether companies were going out of business in this district. Immediately north of the town there used to be approximately eight major companies. Out of that, there are only two left.

Mr. CHENOWETH. If it is any comfort or solace to you, I can remember in my home county in Colorado we used to have about 40 pretty good sized mines, and we have 2 left, belonging to the Colorado Fuel & Iron Corp., which they need in their steel operation. This is not a local problem altogether as far as bituminous coal is concerned. I think it is pretty general.

I think that is all, Mr. Chairman.

Mr. SAYLOR. I certainly want to thank each and every one of you witnesses who appeared here today and testified. I know that the hearing has been beneficial not just to myself, but to the other members of the committee. Even those who are not here, I know, will appreciate the testimony that has been offered.

Thank you one and all. The hearing is adjourned.

(Whereupon, at 4:30 p. m., hearing in the above-entitled matter was adjourned.)

COAL

FRIDAY, FEBRUARY 15, 1957

HOUSE OF REPRESENTATIVES,
SPECIAL SUBCOMMITTEE ON COAL RESEARCH,
OF THE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS,
Abingdon, Va.

The special subcommittee met, pursuant to notice, at 10:30 a. m., in the ballroom, Martha Washington Inn, Hon. Ed Edmondson; chairman of the special subcommittee, presiding.

Mr. EDMONDSON. The Subcommittee on Coal Research of the Committee on Interior and Insular Affairs of the House of Representatives will come to order.

It is a privilege to be in the district of Virginia represented by Pat Jennings, and to hold our second field hearing on the problems of the coal industry in that district.

I am going to ask your very able Congressman to call the witnesses as he has them ready to appear before the committee and to make such remarks as he wishes to make in their introduction.

So, Congressman Jennings, would you call the first witness before the committee, please.

Mr. JENNINGS. At this time I would like to call to the witness stand Mr. W. H. Caldwell, better known to those of us who have the pleasure of dealing with him as Biff Caldwell, who is the commissioner of the division of planning and economic development in the Virginia Department of Conservation and Development, from Richmond.

I might say to you, if Mr. Caldwell uses a little Spanish accent, he has just returned from Mexico where he so ably represented not only those of us in this section in Virginia but those in the whole eastern part of the United States.

Biff, it is certainly a pleasure to have you here at this time, and we will be glad to hear from you.

STATEMENT OF W. H. CALDWELL, COMMISSIONER, DIVISION OF PLANNING AND ECONOMIC DEVELOPMENT, VIRGINIA DEPARTMENT OF CONSERVATION AND DEVELOPMENT, RICHMOND, VA.

Mr. CALDWELL. Thank you, Chairman and Congressmen.

It is certainly a pleasure to be here. I represent the department of conservation and development. Sometimes folks confuse that name. The other day we received a letter addressed to "The Division of Planning and Economic Development of the Department of Conservation and Devilment." We probably do get in some rather unusual things.

It seems to me it is grand that this committee has come to Virginia as one of their first stops. Probably it should have been the first.

We read from the journals of Col. William Byrd—you know we have had Byrds in Virginia for a long time, for which we are glad. He said he discovered that around the year 1700 people were mining coal from the banks of the James River in Richmond. That was rather early. The first commercially operated mine was 1709, and they built a railroad from the mines, from the James River down to the Richmond tidewater to haul the coal down with mules.

So we are not exactly new to the coal industry as far as Virginia is concerned.

Of course, as we found other fields and moved farther west, we are not at the present time using the eastern coalfields. However, the coal is not being spoiled and it will be there when the time comes that we might want it for some use.

We are extremely interested in what is going to happen to coal. Recognizing that the real resource of coal is something that is of extreme value, it disturbs us greatly when we see the black smoke of coal being thrown away, causing troubles in the way of smog and other things. Of course, not in our State, but in some of the States. That is extreme waste of good materials which are in it, and it has caused us considerable concern.

We have tried with other people to try to find a way of carbonizing the coal and extracting the chemicals, as far as our department and our division is concerned. We have spent considerable time and some money with various types of promoters, shall we say, or people who are trying to develop it, hoping that maybe one of these days we will find one that is going to click, and even now we are still working with another.

We requested our Virginia Polytechnic Institute to do work for us, and have assisted them in getting a modest amount of equipment that they can continue to make studies of this type.

Certainly this committee, in looking at the problem and the use of coal, must look at the research. We do not know what we can do with it. We do not know how to do the things that we do know could be done with coal.

I do not think there is any question but what the time is not too far away when maybe we will find that coal is too valuable to use for fuel at all, and we will prohibit the use of it for fuel because we do not want to waste the materials which are in it. I am dreaming now, maybe, just a little bit, but certainly it is extremely important that we do find out what is in the coal.

We were greatly concerned about the situation in southwestern Virginia a couple of years ago when coal mining went down to a very low ebb and when people out here began to get hungry, and we spent considerable time trying to find out how we could help them and how the coal industry could be helped. Fortunately, the coal industry did not need much helping, because they got back on their feet rather rapidly without much assistance from us.

But in doing that, we in our division prepared a study of the production and marketing of coal in Virginia and the Nation from the past, and some forecasts of what might happen to it in the future. I believe that probably Mr. Jennings has supplied your committee with a copy of this, but I do want you to have a copy which I brought here.

We do not say this is the whole answer, but we hope that it will give you some information to assist in your studies.

May I urge, from our standpoint, that everything be done that can be done to assist in finding out the values which we have.

As far as new modes of transportation and new modes of mining and so forth, I have no fear but what the people of the industries who are in that are going to find a way of doing that as time comes along. But certainly in the research, in knowing what we have and how we want to use it, it is extremely important that we take leadership, and certainly, to my mind, it is important enough to the Government of the United States that some real help and real effort be made in this phase. I hope that you can do it.

Of course, we would like very much to see your laboratory established in Virginia, but if it is not, establish it where it is going to do the best for the study of the whole problem as far as the coal situation is concerned.

I am not an expert on this. I am just talking about some of the things which we have seen and some of the things which we have felt.

I do have a letter from somewhat of an expert. This letter is from Mr. Marcellus Stow, who is geological consultant to the director of the department of conservation and development, and is also the professor of geology at the College of Washington and Lee. I would like to read this letter to you and leave it for your files. It reads as follows:

FEBRUARY 13, 1957.

Mr. GEORGE R. LONG,
Regional Representative,
Division of Planning and Economic Development,
Abingdon, Va.

DEAR MR. LONG: Previous commitments in Lexington will prevent me from attending the meeting of the subcommittee of the Coal Research Committee in Abingdon on February 15.

However, I would appreciate it if you would read this statement to the members of the subcommittee at such time as you consider appropriate.

No nation has ever become a world power without coal within its borders. Coal was the basic material in the industrial revolution which began with the invention of the steam engine, but within recent years petroleum has rapidly replaced coal as a source of energy for motive power in transportation.

Virginia's coal resources are enormous, but research on new uses for it is urgntly needed. When coal is burned as fuel, heat alone is produced and there are no recoverable byproducts. It would be presumptuous for me to attempt to make specific suggestions for development of research projects in coal utilization, more efficient mining methods, or utilization of shale wastes, but I wish to emphasize, as a geologist, the importance of this research to the future economy of southwest Virginia and to the entire State.

Furthermore, I wish to call attention to the need for research on many of Virginia's mineral raw materials. The recently established division of mineral resources will take keen interest in, and will lend support to, sound programs of research on various rocks and minerals that are so abundant in southwest Virginia.

Please express my regrets to Mr. Jennings and to the members of the subcommittee for not being able to attend the meeting.

Sincerely yours,

MARCELLUS H. STOW,
Geological Consultant to the Director.

It has been my privilege in the past 2 years to serve on a committee of the South on the study of the civilian uses of atomic energy. It may be that atomic energy is going to come in one of these days and take the place of coal as a power, as a fuel. I think it is going to be some time before that is going to happen, and we are going to use many, many tons of coal along with that. But, regardless of that, the other uses of coal are so important that I again wish to lend my

insistence that you do as much as you can to encourage and to establish some method of discovering the real uses of coal.

I thank you for the opportunity of being heard.

Mr. EDMONDSON. Thank you, Mr. Caldwell, for a very fine statement.

If there is no objection, the report to which you made reference in your statement will be made a part of the file of the subcommittee.

Mr. CALDWELL. There are other copies if you need more.

(The report will be found in the committee files.)

Mr. EDMONDSON. I was interested in the statement in Mr. Stow's letter that the Division of Mineral Resources—is that what it is called?

Mr. CALDWELL. Yes.

Mr. EDMONDSON. Will lend its support to research programs.

We were very much interested in Pennsylvania day before yesterday to discover that the State Legislature of Pennsylvania has just appropriatd $500,000 to be allocated to Pennsylvania State University and other technical schools of that area for specific research in coal. We wonder if Virginia has been that farsighted to provide research funds for the schools of the State to carry on this type of program on coal.

Mr. CALDWELL. Answering your question a little bit fuller than just yes or no, we have for a long time had a department or division of geology. The division of geology has done considerable basic research on the fundamentals of geology. We are now establishing a division of mineral resources, which we hope is going to, shall we say, popularize the information which has been found by the geologists, and find out how we can use those things for the better development of the economy of the State.

Just how much money is going to be appropriated for that, we do not know. We will go back to the next general assembly and ask for more. We have enough to get that started, and if we find that there is a need for research in the colleges, I do not think there is any question but what the State will find money for that.

You have representatives here of Virginia Polytechnic Institute, who, I think, will tell you that they are doing considerable research in coal mining and the coal materials.

A few years ago we had a process which we thought might work. We talked with some of the consulting people across the Nation, and we finally came back to our college of VPI and said, "Here are some basic questions we would like to have answers to." With 95 percent of their funds, and about 10 percent of ours, we let them run some tests there and got the answers. The answers were "No," but we got the answers anyhow, and it did not help us too much to move forward, but we are cooperating with them, and I am sure the State will be glad to appropriate reasonable amounts for their use.

Mr. EDMONDSON. That is fine. It is good to see State interest in this problem and State activity to stimulate further interest, and that is why I was interested in that letter.

Mr. Aspinall, do you have any questions?

Mr. ASPINALL. In the letter, it was stated that the reserves were enormous. Can you advise us as to what the known reserves are estimated to be?

Mr. CALDWELL. This report points out here that, if we were to mine coal, the reasonable, minable coal, at about 20 million tons per year,

we would have sufficient known reserves to last around 250 to 300 years. It is a right good pile of coal.

Mr. ASPINALL. How much of that is owned by private industry?

Mr. CALDWELL. I would judge practically all of it is owned by private industry.

Mr. ASPINALL. There is none under the ownership, then, of the State of Virginia?

Mr. CALDWELL. The only coal that would be under the ownership of the State of Virginia would be in the State forests that we have, and it is quite possible that mineral rights on that belong to somebody else, that they kept the mineral rights when we got the forest. I do not know. I am not sure about that, but there is no sizable amount owned by the State.

Mr. ASPINALL. Our chairman asked you whether or not there had been any moneys appropriated, or whether or not there might be any moneys appropriated, from the State of Virginia to help in any research program. I did not understand you answered whether or not there had been any moneys appropriated except in that one instance where you had donated 10 percent to one program.

Mr. CALDWELL. I am using that as a possible figure. I do not know what the percentage was. But I know VPI was very kind in doing a lot of work for the money we gave them. That is a State college, and of course, the State does appropriate money to that college for the study of coal. For any pure research, coming from the department of conservation and development, there has not been, but I can see in the future the interest coming, and I see no reason why it would not be.

Mr. ASPINALL. Is your coal industry in Virginia on the upgrade at the present time?

Mr. CALDWELL. Yes, sir.

Mr. ASPINALL. How long has it been on the upgrade?

Mr. CALDWELL. I would say now about 2 years.

Mr. ASPINALL. Is there any indication at the present that there will be a slackening-off period soon?

Mr. CALDWELL. I do not see it.

Mr. ASPINALL. I think that is all.

Mr. EDMONDSON. Mr. Chenoweth.

Mr. CHENOWETH. Tell us a little more about your work, Mr. Caldwell, what your interests are in relation particularly to your coal here.

Mr. CALDWELL. I am the commissioner of the division of planning and economic development. That division, in the planning end, works with the localities in my community services, shall we say, in zoning subdivisions, controlling and planning for the future. That is one of the hats that I wear. The other is in industrial development, trying to get industries in, trying to improve the ones that are here, and looking after resources that we have and seeing how they can be used.

Our setup—when I say "division," we are one of the divisions of the Department of Conservation and Development. The Department of Conservation and Development is made up of six divisions—geology, forestry, water resources, public relations and advertising, parks and recreation, planning and economic development.

Mr. CHENOWETH. You have nothing to do with conservation as such?

Mr. CALDWELL. Only as I contribute to it; that is all.

Mr. CHENOWETH. Yours is principally economic development?

Mr. CALDWELL. On the phase of conservation and development which spends what they have.

Mr. CHENOWETH. And you have been trying to find new uses for coal so you could increase production of coal?

Mr. CALDWELL. We have been trying to find new uses for coal and find employment for the people in the area and generally build up the economy of the area.

Mr. CHENOWETH. Mr. Aspinall asked whether or not the production of coal is on the increase, and you said it was.

Mr. CALDWELL. Yes.

Mr. CHENOWETH. In the past couple of years.

Mr. CALDWELL. It was down rather low 2 or 3 years ago.

Mr. CHENOWETH. What part of your total income each year is represented by the production of coal?

Mr. CALDWELL. It would be a guess if I told you. I do not know.

Mr. CHENOWETH. Is it a small or large part?

Mr. CALDWELL. It is a substantial amount.

Mr. CHENOWETH. There will be other witnesses probably who will give us that during the day.

Mr. CALDWELL. That is in that report also.

Mr. CHENOWETH. How many men are employed in the coal-mining industry in this area, just roughly?

We will probably get that from other witnesses, too.

Mr. CALDWELL. Yes, sir; I think so.

There again, it is in this report, which I did not make. Our economists wrote the report, of course.

Mr. CHENOWETH. You mentioned something about the establishment of a laboratory. I do not know that the committee has any plans for more laboratories. I got the impression at Johnstown, Pa., from hearing the Bureau of Mines and Bituminous Coal Research people, and others who testified, that we have about all the laboratories we need. They need more money, more manpower, and perhaps more facilities, but the greatest need seems to be additional finances.

Mr. CALDWELL. We worked, of course, with the Bureau of Mines in our studies.

Mr. CHENOWETH. I think that is all, Mr. Chairman.

Mr. EDMONDSON. If there is no objection from the subcommittee, we will ask our colleague from this district if he has questions.

Congressman Jennings, do you have questions?

Mr. JENNINGS. No questions.

Mr. EDMONDSON. Mr. Soule.

Mr. SOULE. No questions.

Mr. EDMONDSON. Thank you very much for a fine statement, Mr. Caldwell.

Mr. CALDWELL. Thank you.

Mr. EDMONDSON. Call the next witness, Mr. Jennings.

Mr. JENNINGS. First, I would like to recognize the Honorable Vernon Smith, who is a member of the House of Delegates of Virginia, and also on the mining committee in the house.

I wanted to call to the attention of the subcommittee that another member of the house is present.

Mr. EDMONDSON. We are happy to have you with us, Mr. Smith. If you care to make a statement to the committee, we will be very pleased to hear from you.

Mr. JENNINGS. Mr. Chairman, the next witness is Mr. E. H. Robinson, secretary-treasurer of the Virginia Coal Operators Association. Mr. Robinson.

STATEMENT OF E. H. ROBINSON, SECRETARY-TREASURER, VIRGINIA COAL OPERATORS ASSOCIATION, NORTON, VA.

Mr. ROBINSON. Mr. Chairman, members of the committee, and Mr. Jennings, my name is E. H. Robinson. I am secretary-treasurer of the Virginia Coal Operators Association, with offices located at Norton, Va.

The jurisdictional limits of the Virginia Coal Operators Association extends from the Kentucky line in Lee County to Richlands, Va. This area is known as the Virginia district and includes the Counties of Lee, Scott, Wise, Dickenson, Russell, and the lower half of Tazewell County, all of which produce predominantly high volatile coal.

I appear before this committee on behalf of our membership, all of whom operate rail-connected deep mines within the area above mentioned. Our member companies mine approximately 85 percent of the tonnage produced by rail-connected deep mines in the above counties. Membership production for the year 1956 was approximately 9¾ million tons.

We are very appreciative of the interest in our industry's welfare as shown by the Congress and their Representatives here today. It is our understanding that these series of hearings are for the purpose of obtaining general information and specific objectives of the proposed coal research program.

I am going to confine my remarks to the background of the coal industry in Virginia, since there are present here today operators representing both large and small producers who will make statements concerning the program in which the Federal Government, interested and affected State governments, as well as industry, labor organizations, and private corporations might participate.

DEVELOPMENT OF THE VIRGINIA COAL INDUSTRY

Coal is found in Virginia in 3 widely separated and entirely dissimilar areas: The southwest field, which comprises the Counties of Tazewell, Russell, Wise, Dickenson, Buchanan, Lee, and Scott; the valley field, a series of long, narrow coal-bearing areas, concentrated largely in Montgomery, Pulaski, and Wythe Counties, and the eastern field, consisting of 2 small basins near Richmond. No production in the last-mentioned area has been recorded since 1903. The total area of the southwest field is about 1,552 square miles.

Production in the southwest area began in the year 1883 when the Norfolk & Western Railway was built through Bluefield and opened the coal-bearing area in the northern tip of Tazewell County, known as Pocahontas district.

Operations began in Wise County in 1893, following the completion of the Clinch Valley branch of the Norfolk & Western Railway from Bluefield to Norton. Additional development was brought about in

Wise County by the construction of the Louisville & Nashville Railroad in 1893, and the Interstate Railroad in 1907.

Development in Lee County was made possible in 1907 by construction of branch lines by the Louisville & Nashville Railroad and the Southern Railroad which jointly serves all mines in that area.

With the completion of the Clinchfield Railroad from Spartanburg, S. C., to Elkhorn City, Ky., production in Dickenson County began in 1917.

The first development in Buchanan County occurred in 1933 following the construction of a branch line from Devon, W. Va., to Grundy, Va. This line was later extended to the headwaters of Dismal River, opening up for development what is known as the Upper Buchanan District.

It might be interesting to note here that Buchanan County leads all the other counties in the production of coal.

During the year 1948, the Chesapeake & Ohio Railway completed an extension of their line from Jenkins, Ky., to the Pound section of Wise County. This made possible the development of extensive coal reserves in that area.

Within the past year the Norfolk & Western Railway has constructed a branch line beginning at Carbo, in Russell County, and extending northward for a distance of 7 miles. Production in this newly opened area has already begun. One of the largest mines in the State is located on this extension. Application is now before the Interstate Commerce Commission for a further extension of this branch.

You will observe from the above that coal producers in the southwest Virginia area are served by 5 major trunklines and 1 originating line, affording products of its mines to move in every geographical direction and to many consuming areas.

COAL SEAMS AND RESERVES

Approximately 50 different seams of coal are found in Virginia, but about 10 of these seams account for 90 percent of the State's output. These seams vary in character, both physically and analytically, but in all cases are of excellent quality.

A compilation of the association's membership production for the year 1955 showed that coal was mined from 14 different seams, all of which varied in characteristics. It is estimated that about 25 seams are being mined now in the State. This most favorable condition permits those connected with the industry to proudly proclaim that "Virginia has a coal for every purpose."

Virginia's remaining recoverable coal reserves could last 250 years. It is estimated the State had original reserves of 12,051 million tons. To date, 1,240 million tons, slightly more than 10 percent of the estimated original reserves, have been recovered or lost in mining. This leaves Virginia with remaining reserves of 10,811 million tons.

If it is assumed that Virginia will continue, as it has in the past, to recover about 50 percent of the coal underground, this would mean the State has recoverable reserves of 5,405 million tons. During the past 5 years Virginia coal has been mined at the annual rate of 20 million tons. With a continuation of this rate, recoverable reserves would be adequate for another 250 years.

DESTINATIONS OF VIRGINIA COAL

The principal markets for Virginia coals are mainly in the Carolinas, Tennessee, Virginia, and Ohio. The industrial Midwestern States of Illinois, Indiana, Wisconsin, and Michigan have long been stable and substantial markets. In addition thereto, a very substantial tonnage is moved to Hampton Roads for export. The increase in the movement of coal to this port during the past 2 years has been very marked.

I regret that I do not have accurate figures showing the amount of Virginia-mined coal exported.

Virginia coals also move to the Lake Erie ports for transshipment to lake ports in Michigan, Wisconsin, Minnesota, New York, and Canada. Approximately 1 million tons of coal annually is being loaded aboard vessels at these ports. Most of this tonnage originates on the Clinchfield Railroad.

MARKETS FOR VIRGINIA COAL

The four principal markets for Virginia coal today, and to which its fate is tied in the future, are the electric utilities, steel, industrial, and export.

The electric utilities have been one of coal's rapidly expanding markets in recent years, and much optimism exists about this growth continuing. However, there are some uncertainties which might affect the extent to which coal is used for this purpose.

The use of imported crude and residual oil along the coastal markets is very substantial, thus creating a highly competitive market. Also, the inroads being made by natural gas and the development of atomic power are factors to be considered. A substantial tonnage of Virginia-mined coal moves to electric utility plants, which has been augmented during the past year by the placing in operation of the John Sevier plant of the TVA. This plant consumes over 1,500,000 tons of coal annually, and due to its location close to the Virginia coalfields, a sizable quantity of our coal is being used.

Virginia-mined coal has managed to supply an increasing proportion of coal used in producing the Nation's steel and shows every likelihood of maintaining this share as the demand for steel expands.

The industrial market for our coals primarily consists of large manufacturing plants located in North and South Carolina, Tennessee, and Virginia. These industrial consumers are primarily the chemical industry, pulp mills, cement and clay plants, textile mills, food and tobacco manufacturers.

Mention has heretofore been made relative to the export market. Many uncertainties make it impossible to predict the future of this market. Any decline in industrial production in the foreign markets would likely cut imports of coal.

It must not be overlooked that Virginia coals have suffered market losses also. Prior to 1947, railroad fuel was one of our most important markets. At one time more than 1 million tons of railroad fuel were sold annually. Due to the displacement of steam locomotives by diesels, this market has almost disappeared.

The inroads made by oil and gas for domestic heating purposes have had their effect on markets for our coal. The demand for this type of coal has declined steadily following the end of World War II.

NUMBER OF MINES AND EMPLOYEES

The latest information available relative to the number of mines in Virginia and the number of employees is furnished by the Virginia Department of Labor and Industry for the year 1955, and is set forth in the compilation below, and you will notice I have four types of mines:

Type of mine	Number of mines	Tonnage mined	Number of employees
Tipple	94	11,648,902	5,937
Strip	44	961,950	263
Truck	1,203	8,990,079	6,934
Auger	24	248,184	122
Total	1,365	21,849,115	13,256

Attention is directed to the large number of truck mines, the tabulation showing that 1,203 mines of this type operated during 1955.

I might remark there that the filing of a report for each one of these mines is necessary, even though they have changed ownership 2 or 3 times during the year. A man might operate a mine for 2 or 3 months, and then somebody else come along and take it up and operate it again.

It is our feeling that there is considerable duplication with respect to the number of these mines, as frequently ownership of a mine will change hands several times during the year.

These mines, while having small producing capacity, nevertheless account for 41 percent of the tonnage produced in 1955. The average days worked during the year by this class of mines was 127 as compared with 222 days for the tipple mines.

Wages paid to surface and underground workers in all types of mines in Virginia for the year 1955 amounted to $42,236,702, while officeworkers received $2,131,725, or a total of $44,368,427.

We have endeavored to set out in these remarks a brief outline of the background of the southwest Virginia coal industry, for the purpose of showing that the economy of the counties comprising the coal area is in whole, or in part, based on the production of its mines.

Our mines have, for a number of years, been limited in their production due to lack of market, which often resulted in the closing of mines, numbers of employees being thrown out of work, and whole communities, dependent on coal mining, adversely affected.

As an illustration, during the year 1954, records of the Virginia Unemployment Compensation Commission show that unemployment benefits paid to coal-mine employees amounted to $1,948,770, which was an increase of 100 percent over the year 1953, and 300 percent increase over the year 1952.

It is true that during the last few months the general economic level of our industry has been better, but consideration must be given to the future. For that reason, it is the opinion of the membership of the Virginia Coal Operators Association that every effort possible

should be made to expand the use of our fuel. We feel that a comprehensive program of coal research along the lines set forth in H. R. 400 would do much to accomplish this purpose.

Mr. EDMONDSON. Thank you very much, Mr. Robinson.

Do you have any questions, Mr. Aspinall?

Mr. ASPINALL. Yes; I have 1 or 2 questions.

Mr. Robinson, how does the production of coal in quantitative amount for 1956 compare with the last production for any year had theretofore?

Mr. ROBINSON. In Virginia?

Mr. ASPINALL. Yes.

Mr. ROBINSON. Our 1956 will be the highest year of production in the record of Virginia.

Mr. ASPINALL. The highest year of production in the record of Virginia?

Mr. ROBINSON. I think it will be. My preliminary reports show about 33½ million tons of production in Virginia for 1956 as compared to practically 32 million tons in 1955.

Mr. ASPINALL. The reason, then, for the lesser employment is because of the additional use of machinery; is that correct?

Mr. ROBINSON. That is right.

Mr. ASPINALL. Off the record.

(Discussion off the record.)

Mr. ASPINALL. In this report which Mr. Caldwell placed in the file, on page 4, there is a table shown as table 13, "Hydrocarbon raw materials likely to be required in producing chemical end products between 1955 and 1975," and it shows in 1975 the total hydrocarbon raw-material prospects of production in millions of pounds to be 53,230,000 in that year. There is no appreciable amount of your coal presently being used in the production of any hydrocarbon by-products. Is that correct?

Mr. ROBINSON. Not that I know of. Some of my operators could tell you more about that than I can.

Mr. ASPINALL. Do you think there is any likelihood within this 20-year period that has been set forth in this table that any appreciable amount of Virginia coal is going to be used in the production of hydrocarbons?

Mr. ROBINSON. I could not tell you that either.

Mr. ASPINALL. That, of course, is one of the problems that this committee faces.

Mr. ROBINSON. That is right.

Mr. ASPINALL. To see whether or not there is any opportunity of coal being placed in that kind of production.

One of the gentlemen who preceded you, I think Mr. Caldwell, stated that he could perhaps forsee the future when there would not be any use of coal whatsoever for fuel.

Mr. ROBINSON. That could be possible.

Mr. ASPINALL. I suppose, by the same token, he meant for power also. Can you foresee any time in the future where we will not use this great natural resource of ours for that purpose?

Mr. ROBINSON. I hope I cannot.

Mr. ASPINALL. I do not believe Mr. Caldwell meant it quite like I have suggested it.

That is all.

Mr. ROBINSON. I would like to apologize to Mr. Caldwell because I used some of his ammunition in his report. I did not know he was going to appear.

Mr. EDMONDSON. Do you have any questions, Mr. Chenoweth?

Mr. CHENOWETH. I would like to ask you about the number of mines today as compared with, say, 5, 10, 15, 20 years ago. I get the impression you are very optimistic about the future of the coal-mining industry.

Mr. ROBINSON. Of course, there are more mines in Virginia today than in any past time, due to the rapid development of truck mines.

Mr. CHENOWETH. Then the development of truck mines is what caused the increase in production?

Mr. ROBINSON. I would not say that exactly.

Mr. CHENOWETH. They have 41 percent of the production now.

Mr. ROBINSON. That is right.

Mr. CHENOWETH. When did your truck mines begin to operate in any great number?

Mr. ROBINSON. I would say in the past 2 or 3 years. That is particularly true in Buchanan County.

Mr. CHENOWETH. What brought that about? Where is the demand for that coal coming from?

Mr. ROBINSON. A whole lot of coal is trucked to railroad loading ramps, and some of that coal is also delivered to the large producers who process that coal through their preparation plants.

Mr. CHENOWETH. By truck mine, you mean any mine that is not located on a railroad?

Mr. ROBINSON. That is right.

Mr. CHENOWETH. I see. Ordinarily, in our part of the country, a truck mine is one where the coal is delivered to the customer by truck.

Mr. ROBINSON. Of course, in our situation here, very few of the trucklines are located on the railroads.

Mr. CHENOWETH. I see. A total of 1,365 mines in this area. Five years ago, were there more mines than that?

Mr. ROBINSON. No; I think there were less 5 years ago.

Mr. CHENOWETH. In the last 5 years you have had quite an increase?

Mr. ROBINSON. Yes. That is due, I guess, to the general increase in the industry during the past 2 or 3 years.

Mr. CHENOWETH. Then, as I understand it, your coal industry here is just beginning to develop now. Is that right?

You see, in other coal-producing areas they have had a decline and depression, and large numbers of people out of employment; the mines have been closed.

I understand you are developing and opening up here in Virginia.

Mr. ROBINSON. Since 1947–48, after the war period, in our mines production dropped, and began picking up again in, I would say, 1950, and then it dropped in 1952, 1953, and 1954.

Mr. CHENOWETH. Mr. Aspinall asked you about the total tonnage compared to other years, and you say that 1956 will be the highest tonnage in history.

Mr. ROBINSON. That is right.

Mr. CHENOWETH. You are really just beginning to reach your peak of production here?

Mr. ROBINSON. Yes.

Mr. CHENOWETH. Is the export business accountable for a good part of that increase?

Mr. ROBINSON. Yes; it is. I regret I do not have the export figures.

Mr. CHENOWETH. Will someone testify who will have those figures?

Mr. ROBINSON. I imagine the N. and W. Railroad can furnish those figures.

Mr. CHENOWETH. Are you familiar with what the percentage would be going to export?

Mr. ROBINSON. I have no way of knowing.

Mr. JENNINGS. Will the gentleman yield?

Mr. CHENOWETH. Yes.

Mr. JENNINGS. We have a representative from the railroad who will testify.

Mr. CHENOWETH. Fine. How about the railroads? Are they using coal for the most part through this area?

Mr. ROBINSON. No, sir.

Mr. CHENOWETH. We came in this morning on a train pulled by a steam engine.

Mr. ROBINSON. They do use some coal.

Mr. CHENOWETH. Do they use coal exclusively?

Mr. ROBINSON. Not exclusively. They have some diesels now.

Mr. CHENOWETH. You go to almost any section of the country, and you will find nothing but diesel power now.

Mr. ROBINSON. That is right.

Mr. CHENOWETH. This is one of the few places where they still use coal-burning engines.

Mr. ROBINSON. I think the Norfolk & Western Railroad are still using coal. I do not believe that is true on the Southern, the Clinchfield, Interstate, other railroads serving this area. The L. and N. have a few.

Mr. CHENOWETH. Most of the railroads west of Chicago are running diesels exclusively, and so I was surprised to see a steam engine this morning. I thought maybe they had gone to diesels in here.

Mr. ROBINSON. I am glad that Mr. Prosser, of the Norfolk & Western, said at one time they would never use diesel locomotives. They have kind of broken over in some respects.

Mr. CHENOWETH. You have all types of coal, you mention here. Is domestic coal one of your big markets?

Mr. ROBINSON. That market has declined very much, exceedingly, since World War II. That is for household use.

Mr. CHENOWETH. Gas has replaced it?

Mr. ROBINSON. Gas and fuel oil.

Mr. CHENOWETH. Gas and fuel oil?

Mr. ROBINSON. Yes.

Mr. CHENOWETH. You mentioned that utilities is increasing.

Mr. ROBINSON. That is right.

Mr. CHENOWETH. You are selling more and more coal to utilities?

Mr. ROBINSON. That is right.

Mr. CHENOWETH. What about steel? Are you selling coal for steel?

Mr. ROBINSON. There is a considerable amount of coal moved to steel mines.

Mr. CHENOWETH. Where does that go—what area?

Mr. ROBINSON. I could not tell you.

Mr. CHENOWETH. You do not have any steel plants in this area, do you?

Mr. ROBINSON. No.

Mr. CHENOWETH. You feel very optimistic then about the future for coal here?

Mr. ROBINSON. A lot better than I felt 2 or 3 years ago; yes, sir.

Mr. CHENOWETH. Were these coal operators who are going to follow you going to be that optimistic?

Mr. ROBINSON. I will let them speak for themselves.

Mr. CHENOWETH. The reason I mentioned that, in Johnstown the other day we had all of this optimism expressed in the early part of the hearings, and when the coal operators took the stand, they did not quite share that optimism. They have some problems facing them right now.

Mr. ROBINSON. We have some problems. We are sure of that, and we have got to expand the use of our coal.

Mr. CHENOWETH. Do you think you are going to find new markets and new uses for coal?

Mr. ROBINSON. That is right.

Mr. CHENOWETH. That is what we are trying to do, and is the purpose of our being here today.

Thank you very much.

Mr. EDMONDSON. Mr. Jennings.

Mr. JENNINGS. No questions.

Mr. EDMONDSON. Mr. Soule.

Mr. SOULE. No questions.

Mr. EDMONDSON. Thank you very much, Mr. Robinson.

Mr. JENNINGS. Mr. Chairmain, at this time I would like to introduce and call to the stand Mr. Robert H. Hughes, president of the Clinchfield Coal Co., Dante, Va., one of our best—I suppose I should say the best—operation in our district, which has been expanding tremendously and is one of the progressive companies.

I believe Clinchfield is a subsidiary of Pittston Corp., and I feel it is a great boost to our economy to have this mine organization in this district.

Mr. Hughes.

STATEMENT OF ROBERT H. HUGHES, PRESIDENT, CLINCHFIELD COAL CO., DANTE, VA.

Mr. HUGHES. Mr. Chairman and members of the committee and Mr. Jennings, thank you for the kind words, Pat.

My name is Robert H. Hughes. I am president of Clinchfield Coal Co., Dante, Va. Our company produced 9½ million tons of bituminous coal last year, 6 million of which was produced in Virginia, 3 million in West Virginia, and one-half million in Tennessee.

I am also president of the Virginia Coal Operators Association, the members of which produced just a little less than one-half of the total coal produced last year in Virginia.

As Mr. Robinson told you, that association represents producers who last year produced about one-half of Virginia's production of coal.

Mr. Chenoweth mentioned some witnesses in Johnstown from the Bituminous Coal Research. It is not in my record, but I happen to be a director of that organization, too.

The Commonwealth of Virginia has a recoverable reserve of approximately 5½ billion tons of mineable and merchantable coal.

Mr. EDMONDSON. Pardon me.

Do you mean that there is that much recoverable coal in Virginia? The Commonwealth does not own any coal to amount to anything, does it?

Mr. HUGHES. No, sir. That amount exists in the Commonwealth of Virginia. I am speaking there of that mineable and merchantable coal that can be mined with today's equipment and methods and marketed with today's competitive situation.

Of Virginia's production of minerals, coal is the largest in volume, has the greatest money value, represents the largest capital investment, and employs the greatest number of people. Coal, therefore, is of tremendous importance to the economy of our State.

We are highly gratified that this committee is holding this hearing in Virginia, and we extend to you gentlemen, collectively and individually, a cordial invitation to visit our mines.

We do have some of the largest and most modern mines in the industry.

We who are in the coal-mining business have felt for several years that the lack of an adequate research program has greatly aggravated the ills of our industry.

In the history of the coal industry, there has never been a coal company, with possibly one exception, with the tonnage volume and financial resources to do the research and development work necessary to keep coal in the forefront as a supplier of the energy and chemicals required by our Nation's expanding economy.

We are firmly of the opinion that coal research represents a proper area of action by the Federal Government because, first, the research needs of the industry are so numerous and complex; second, the success or failure of the industry now affects such a great proportion of our population, and third, the coal requirements of the U. S. A. are so vitally important to the economy and welfare of the entire free world.

It is no exaggeration, of course, to say that America has become the coal bin of the world. We are shipping coal to England, France, Germany, Italy, Japan, South America, and the Scandinavian countries in large volumes. When I say we are shipping those coals, our company here in Virginia is doing that, and other companies in the Commonwealth, too.

Despite the opinion of many people that coal is an inefficient, antiquated fuel, mining a hazardous and dangerous occupation, and that the coal industry is the prime example of the worst in management-labor relations, the actual fact is that without this vital chemical and energy source, civilization as we know it could not exist.

Coal is a highly complex substance varying greatly in its chemical and physical characteristics. These variations make extremely difficult the problem of determining a research program that will work to the greatest good of the greatest number of people. I frankly don't envy you gentlemen your job.

As an example of the variations, here in Virginia our coals are extremely low in sulfur, making them highly desirable for the production of metallurgical coke for the steel industry. Therefore, in Virginia we have no research needs with respect to the sulfur content of our coals.

In northern West Virginia, however, most of the coals are high in sulfur, making them in most cases unsuitable for metallurgical use, and in some cases even reducing their value for use as a powerplant fuel. In that district, then, there is a great need for a research program for the reduction of sulfur in coal, elimination of sulfur dioxide from stack gases, plus a need for research on the recovery of sulfides from the waste material at coal cleaning plants.

On the other hand, here in Virginia our mine roof conditions are poor, so information on roof control is a vital requirement, whereas in northern West Virginia roof control is only a secondary research objective.

So those simple examples of the variations in the coal reserves of our country play up the complexity of the research program.

The three research objectives that I want to stress as being particularly desirable from our viewpoint are: Mining, preparation, and utilization.

With regard to the first, mining, we feel that a vast amount of information is needed about the physical characteristics of coal beds, their roof, bottom, the impurities in the beds, and the significance of these characteristics on the performance of mining equipment.

In the past 10 years, we have made remarkable advances in mechanizing our mining operations in that we have installed machines to do the work formerly done by hand labor.

If we could develop basic information that would permit some device to control our machines underground—that is about the simplest definition of automation you can have, I suppose—then we could get the higher recovery from this great natural resource, aiding in its conservation. We could also improve our facing conditions, and we could eliminate some of our hazardous jobs.

With regard to the second objective, preparation, improved preparation of coal for its various markets has done much to better public acceptance of coal as a necessary and desirable raw material. It has also permitted the recovery of great quantities of coal from beds which in prior years were considered to be unmarketable because of the impurities in the seams. A great deal of opportunity, however, still exists for the improvement of cleaning, sizing and drying of the finer sizes of coal ranging from a size of 1½ inches and smaller.

There is a great deal of area in that phase of our business which still needs work. Preparation requirements are particularly strong on smaller sizes of coal. We need better equipment and better knowledge about the sizing and cleaning and drying of coals from about 1½ inches in size and smaller. There is a great deal of work that needs to be done in that field.

In the last objective, utilization, I group the research needs of the conventional use of coal as a fuel, with the less well-known processes of hydrogenation, gasification, and synthetic manufacture of chemicals.

Modern combustion and heat transfer equipment is considered to be highly efficient but, unfortunately, comparisons are usually made with

the practices of 20 or 30 years ago. There is still much room for improvement in this field, and since 80 percent of the coal that is produced is used as fuel, a small increase in the efficiency of burning coal would represent a tremendous saving to the people of our country. After all, 80 percent of our last year's industry production amounted to 400 million tons. With a multiplier like that, a slight improvement in efficiency would create a tremendous savings to our people.

Use of coal as a raw material for the other processes mentioned represents a fantastic potential for the benefit of both the coal industry and the entire American public.

I am referring there, of course, to hydrogenation, carbonization, and to the extraction of chemicals and so forth from coal.

Speaking for our company and the Virginia Coal Operators Association, I strongly endorse the policy on research outlined by the resolution adopted by the board of directors of the National Coal Association on January 9, 1957, as follows:

1. That a coal research commission be established consisting of representatives of the coal industry, major coal-using industries, representatives of Government, and such other representatives as may be necessary in order to provide proper representation by all parties interested in the establishment and progress of a coal research program. The responsibilities of this commission would be:

(*a*) To undertake a thorough and objective appraisal of the present status of research and development relating to coal production and use.

(*b*) To evaluate the effect which various trends will have on future markets for coal and coal-utilization technology.

(*c*) To formulate, on the basis of these appraisals, a strong program of research and engineering development projects on coal production, distribution, and utilization.

2. That Congress provide ample funds for conducting such coal research program, with provision for using such funds in part for contracting with non-Government research organizations.

3. That provision be made for joint evaluation at certain specified periods, of the progress made and consideration given to such program changes as may from time to time be indicated.

We are in favor of this policy for three reasons:

First, we believe it represents a policy that can produce the greatest achievements in the shortest time.

Second, we believe it will make the most effective use of existing scientific personnel both as to numbers and knowledge.

Third, the policy follows the traditional American method of giving everyone concerned in the problem a voice in its solution.

Thank you.

Mr. EDMONDSON. Thank you very much. I am very pleased in particular to get an expression from the field in support of this National Coal Association policy. We are interested in the opinion of other operators, and the representatives of the unions as well, on this policy statement by the National Coal Association.

Do you have any questions, Mr. Aspinall?

Mr. ASPINALL. I have 2 or 3 short questions.

Mr. Hughes, in the year 1956 how did your profits, as such, compare with the previous year's for your company?

Mr. HUGHES. 1956 was not our highest profit year. I believe we would have to go back to 1948 for that. However, our profits were the highest in the past 5 years. Our production was greatly increased over that 5-year period.

Mr. ASPINALL. You endorse the research program, and you ask the Federal Government appropriate funds.

As a coal-mining producer of Virginia, what percentages do you think the Federal Government, the Commonwealth of Virginia, and the private interests themselves should accept in such a research program as you have in mind?

Mr. HUGHES. I certainly agree it should be a cooperative effort.

Speaking for our company, we would certainly be willing to contribute to a program. Insofar as exact quantities, I do not believe I have an opinion right at the moment, sir.

Mr. ASPINALL. Am I right in my present thinking that with the production of coal in the year 1956, and this year coming up, being the highest in the history of Virginia, your production is not dependent to any great degree upon exports to foreign countries, such exports having been reduced materially in the last 3 or 4 years, but perhaps is more dependent upon the use of your coal in the production of power and the production of steel and processing?

Mr. HUGHES. I would say that the export market for coals from Virginia is an extremely important part of our market. Our own company—of our Virginia production 25 perecent of our production last year, or approximately a million and a half tons, went to export. Of our entire company's production, 30 percent went to electric utilities, 30 percent to the steel industry, 20 percent to general industry, and the balance went to export and miscellaneous uses. The 25 percent I mentioned was of our Virginia production.

Of our West Virginia production, none went to export, but in Virginia the export market is of tremendous importance, and if we lose it, the industry would be badly hurt.

Mr. ASPINALL. Perhaps the document which was made a part of the file by Mr. Caldwell does not show the true picture, because my chairman tells me that production for export has gone up for 1955 and 1956, although this document shows that there has been a rapid decline from 1951 to 1954.

That is all.

Mr. EDMONDSON. Mr. Chenoweth.

Mr. CHENOWETH. Mr. Hughes, your company produces almost a third of the coal produced in the State of Virginia, I notice, according to the figures submitted this morning.

Mr. HUGHES. That is right, sir.

Mr. CHENOWETH. How many employees do you have?

Mr. HUGHES. In Virginia we have 2,200. Our total company employment is 3,200.

Mr. CHENOWETH. 3,200?

Mr. HUGHES. Yes, sir.

Mr. CHEOWETH. Is the number of people employed on the increase or decrease?

Mr. HUGHES. With our company, it is greatly on the increase. Ten years ago our company produced less than 2 million tons per year. We have greatly expanded our production in the last 10 years.

Mr. CHENOWETH. In the last 10 years?

Mr. HUGHES. Yes, sir. Actually, we have opened new mines, we have built new preparation plants. Last year we opened a new mine in Virginia. It went into operation on October 15. We now have on the drawing board plans for an even larger mine in the State of Virginia, a mine that will produce 3 million tons per year. We are waiting for a decision, as Mr. Robinson mentioned, of the Interstate Commerce Commission granting extension of the railroad to get to this new mine. We are buying the equipment for it now. We have appropriated the money, and we expect it to be in operation by June of 1958.

Mr. CHENOWETH. In other words, the demand exceeds the supply so far as Virginia is concerned; is that correct?

Mr. HUGHES. I would not say that, sir. We have an excellent sales organization, and they are busy all the time.

Mr. CHENOWETH. Where are you getting these salesmen?

Mr. HUGHES. I think that is classified information, sir. [Laughter.]

Mr. EDMONDSON. That is a good answer.

Mr. JENNINGS. Is it not also due to your training?

Mr. HUGHES. That is right, most of them.

Mr. CHENOWETH. I know you are very enterprising people here in Virginia, and I am not surprised. But I cannot quite reconcile the fact other coal areas are depressed and here in Virginia you are on the increase, with a very rosy outlook for the future.

Mr. HUGHES. Frankly, I am very optimistic about the future of our coal industry, primarily because of the market. Here in Virginia we do have an export market. We have a direct rail haul to Hampton Roads. The mines in Illinois and yours in Colorado do not have that.

Mr. ASPINALL. In Colorado we just do not have any.

Mr. HUGHES. West Kentucky cannot reach export markets because they do not have favorable freight rates to the ports.

Then, too, we have extremely high-quality coals here that are suitable for the metallurgical market, low in sulfur. Our company ships coal to the United States Steel at its big Fairless plant, Bethlehem, Republic, Youngstown.

Mr. CHENOWETH. Have you always done that?

Mr. HUGHES. No, sir.

Mr. CHENOWETH. When did you start to get this business?

Mr. HUGHES. We started in 1953, sir. Therein again lies part of the great increase in the coal business in southwest Virginia.

Mr. CHENOWETH. Are you taking this business away from Pennsylvania coal operators then?

Mr. HUGHES. Yes, sir. The reason for that, though, is that the higher quality coals in Pennsylvania are being depleted. There is not as large a supply there now as there was in the past. In the years gone by, naturally they used the Pennsylvania coals because of the short haul, the low freight rate. Now, since a lot of those mines have depleted their resources, they are willing to pay higher freight rates.

Then again, the steel industry, as you probably know, since the end of World War II, has increased its capacity by 50 percent. So there is a great additional need for coal by the steel industry.

There is one other thing, too, on that steel business. The steel companies, of course, produce a lot of their own coal, but they are now following the practice that where additional supplies of coal are

needed, they are going into the commercial market. They are sticking a little closer to steelmaking and letting commercial, professional coal miners do the coal mining. So they are not increasing their own production commensurate with the increase in their steelmaking capacity.

Mr. CHENOWETH. So far as the research program is concerned, do you not think the Bituminous Coal Research, of which you are a director, has been doing a pretty good job?

Mr. HUGHES. They are doing an excellent job.

Mr. CHENOWETH. Do you need anything to supplement that organization, in your opinion?

Mr. HUGHES. Yes, sir; we need more money.

Mr. CHENOWETH. What else do you need?

Mr. HUGHES. We need more men, we need more money, of course, and we need larger facilities.

Mr. CHENOWETH. I believe they stated they are spending about a million dollars a year on research, the BCR, and that is all private money.

Mr. HUGHES. Oh, yes; our company contributes to that.

Mr. CHENOWETH. Where do you think the Federal Government comes into this research picture?

Mr. HUGHES. I think the Federal Government, first of all, should coordinate all of the efforts being made on research. That would certainly eliminate some duplication, and with the shortage of trained men that we have, we certainly do not want any more duplication.

But the efforts of Bituminous Coal Research, for instance, are badly limited by the small amount of money that they do have.

I would say, as a director, we have a long list of desirable research projects which we just cannot enter into because of lack of facilities and lack of money.

Mr. CHENOWETH. If all of these coal areas were as prosperous as yours, you could double that budget, could you not, with your present income?

Mr. HUGHES. I think the budget should be multiplied by, I would say offhand, at least 10, sir. Of course, all the industry does not support Bituminous Coal Research. In fact, some of the largest companies do not support it. We are working on those, and more and more of them are coming in as they see the need for it.

Mr. EDMONDSON. Will the gentleman yield?

Mr. CHENOWETH. I will be glad to.

Mr. EDMONDSON. As I understand the organization basis for your financing of Bituminous Coal Research, it is on tonnage.

Mr. HUGHES. That is right.

Mr. EDMONDSON. The contribution is based on the tonnage and production for the preceding year; is that right?

Mr. HUGHES. That is right.

Mr. EDMONDSON. And when you have a decline in your production, as you have had in some areas, you have a declining budget for research, just the opposite of what really your need is when your production goes down, do you not?

Mr. HUGHES. That is exactly right.

Mr. EDMONDSON. Where you have had increased production—and of course we have seen an increase in production in the last 2 years—you have had more money available for research. But if there should

be a decline for any reason, your funds available for research and your method of organization would be reduced; would they not?

Mr. HUGHES. That is true. That method of assessing the membership, of course, was expected to make the burden equitable on all of the companies, the large and the small, but I regret to say that a lot of companies still are not members, but the need for research, the publicity that has been given to it, are bringing more and more into the organization.

Mr. EDMONDSON. Thank you.

Mr. CHENOWETH. Is there any unemployment at all in the coal industry in this area?

Mr. HUGHES. Yes, sir; there is.

Mr. CHENOWETH. What is causing that?

Mr. HUGHES. That is due to mechanization primarily.

Mr. CHENOWETH. How many miners would you say are out of work in this area, roughly? Any considerable number?

Mr. HUGHES. I would guess—it would only be a guess.

Mr. CHENOWETH. You say you are hiring more men all the time?

Mr. HUGHES. That is right, sir. We are increasing our employment.

Mr. CHENOWETH. Are you hiring these men that are thrown out of work in other mines then?

Mr. HUGHES. Yes. Of course, first of all, as our employment increases—I will say it this way:

Our increase in employment is a changed condition. Just a few years ago we were laying off miners. When our company started into its mechanization program in 1943, we had about as many employees as we have now, and our employment decreased for several years there as we put more and more equipment to work. Then when we started opening new mines, and employing more people, we first went to the same people that formerly worked for us. But we have about eliminated that source now, so we are getting applications from Kentucky, West Virginia, and some other areas like that.

Mr. CHENOWETH. Do you get a good type of coal miners, experienced miners?

Mr. HUGHES. In most cases. There is a great shortage of certain classifications now, such as mechanics, electricians, machine operators, shuttle-car operators, those sort of things.

Mr. CHENOWETH. Yes.

Mr. HUGHES. But there is available to us a large number of trained coal miners.

Mr. CHENOWETH. You are talking about Virginia when you are talking about unemployment?

Mr. HUGHES. Yes, sir.

Mr. CHENOWETH. You are not talking about West Virginia?

Mr. HUGHES. No.

Mr. CHENOWETH. What is your situation there?

Mr. HUGHES. There they have some unemployment, but there again, in West Virginia, in our mines in the Fairmont field—we are opening new mines there. We opened a new one last year. So our employment there is on the increase, our total employment.

Mr. CHENOWETH. I have had a rather dismal picture of the coal-mining conditions in West Virginia, obtained by hearing West Virginia Members of Congress relating the situation there. Am I to

understand from you that that picture is not quite as bad as we have been led to believe?

Mr. HUGHES. I would say it is spotty. It is undoubtedly true there are large areas in West Virginia where the coal industry is in the doldrums, and where there is need for certain improvements. In certain spots the coal industry is fairly good there. Fortunately, we are in one of those good spots.

Mr. CHENOWETH. Maybe you ought to transfer some of these super-salesmen over to West Virginia and let them develop that area.

Mr. JENNINGS. I would register an objection. [Laughter.]

Mr. CHENOWETH. I think that is all.

Mr. EDMONDSON. Mr. Hughes, what is your average wage per day to miners in this area in the tipple mines?

Mr. HUGHES. It amounts to, let's see—we pay the union wage. I think I can answer your question better this way: Last year, 1956, the total earnings of our employees amounted to $5,250. That is annual wage.

Mr. EDMONDSON. Your mine is union?

Mr. HUGHES. All of our operations are under the wage agreement with the United Mine Workers.

Mr. EDMONDSON. If it is not getting into classified information, what will your per man-day of production run?

Mr. HUGHES. In Virginia, it runs around 12 tons. In West Virgina, we get 18 to 19, and in Tennessee we get 16. That is the productivity per man per day, everyone on the payroll, including me.

Mr. EDMONDSON. About what is the average thickness of the seams you would be working in your operations here in Virginia?

Mr. HUGHES. We work seams from 42 inches to 14 feet here in Virginia. The new mine that we are opening, which we plan to have in operation in 1958, will have an average thickness of about 12 feet. In West Virginia our seams—we are in Pittsburgh No. 8, so it is between 5½ and 7 feet.

Mr. EDMONDSON. Mr. Jennings, do you have any questions?

Mr. JENNINGS. I do not believe so.

Mr. EDMONDSON. Mr. Soule.

Mr. SOULE. No.

Mr. EDMONDSON. Thank you, Mr. Hughes, for a very fine statement.

Mr. JENNINGS. At this time Mr. Harry Johnson, a Buchanan County coal producer, was supposed to testify. I believe he is not here, but in his place Fred Shortt will testify. Mr. Shortt, of the Mingo Lime & Lumber Co.

STATEMENT OF FRED SHORTT, MINGO LIME & LUMBER CO.

Mr. SHORTT. Mr. Chairman and gentlemen, I guess that I would represent the smallest operation in southwest Virginia.

Mr. EDMONDSON. The what, sir?

Mr. SHORTT. The smallest operation in southwest Virginia.

I just have a statement which I have written out since I arrived. I have been thinking about this for a long time, but did not know I was supposed to testify.

Mr. EDMONDSON. We will be pleased to hear your statement.

Mr. SHORTT. We, of Buchanan County, Va., have no other means of making a living other than by mining and selling coal. We have

a population of approximately 38,000 people who depend entirely on coal for a livelihood.

I have lived all my life in the coalfields in Wise County and Buchanan County, Va. I have seen many boom periods and many depressions in the coal industry. We, of the coal industry, have failed, I think, in pushing forward in research to discover the uses of coal. Too often we have been intent only on one thing, namely, that of mining coal and hoping to show a profit thereby.

I feel that we need a vastly expanded research program, and this hearing affords us a ray of light in the gloom and darkness of our industry. We especially would like to see more effort put forth in research on the blending of coal for industrial use, that is, to take the various seams—one has maybe one quality and another has another quality, and they could be blended together, maybe, and would make it more attractive to the purchaser.

Also, research on additional uses of coal. Our county has many seams of minable coal above our main stream levels, which can be and are at present being mined by what is known as tunnel or drift method. The seams underneath our streams, of course, will have to be mined by shaft method, and none of those are being mined at present.

At this time, we are producing about 30 to 40 tons of coal per working day.

Mr. I. J. Richardson is present and he may have better information on that tonnage than I, but that is my estimate, taking the number of railroad cars that go out each day.

We have the manpower and, we think, the know-how to greatly increase our production. We hope that through research we may be able to sell more of the only known product we now possess and thereby enable our population to have a better standard of living.

That is the only statement I have.

Mr. EDMONDSON. Thank you, Mr. Shortt.

Mr. Aspinall, do you have any questions?

Mr. ASPINALL. Did you say, Mr. Shortt, you are a coal producer?

Mr. SHORTT. A small producer; yes, sir.

Mr. ASPINALL. How much do you produce a day?

Mr. SHORTT. Approximately 150 tons per day.

Mr. ASPINALL. Per day?

Mr. SHORTT. Yes.

Mr. ASPINALL. And how many employees do you have?

Mr. SHORTT. Counting truckdrivers, it would be about 15.

Mr. ASPINALL. Do your books show you made a profit in 1956?

Mr. SHORTT. We barely did.

Mr. ASPINALL. Did you make as much in 1956 as you did in any of the previous 10 years?

Mr. SHORTT. We were not operating previously. We had only just begun in 1955.

Mr. ASPINALL. That is all.

Mr. EDMONDSON. Mr. Chenoweth.

Mr. CHENOWETH. You say you spent your entire life in the coalfields?

Mr. SHORTT. Yes, sir.

Mr. CHENOWETH. What had you done previously before you started the operation of your mine?

Mr. SHORTT. Taught school; been in business.

Mr. CHENOWETH. What attracted you to the coal industry?

Mr. SHORTT. I suppose being in the coalfields and having worked some in the mines, and it does have an attraction.

Mr. CHENOWETH. Are others being attracted the same as you were?

Mr. SHORTT. I am sure they are.

Mr. CHENOWETH. The number of mines is increasing. What type of mine is this you have?

Mr. SHORTT. It is what is known or designated as a truck mine.

Mr. CHENOWETH. Is it a new mine? You just opened it up now?

Mr. SHORTT. In 1955.

Mr. CHENOWETH. There never had been a mine there before? You did not take over an old mine?

Mr. SHORTT. No, sir.

Mr. CHENOWETH. You opened up a brand new mine?

Mr. SHORTT. That is right.

Mr. CHENOWETH. Whom do you sell your coal to?

Mr. SHORTT. We sell it to various—we have loading docks, what we call loading docks, in our county, and they buy the coal, similar to warehouses.

Mr. CHENOWETH. Sort of a brokerage firm that sells to individuals and consumers?

Mr. SHORTT. They sell to consumers.

Mr. CHENOWETH. Do they sell domestic coal, that is, that goes into homes for heating purposes?

Mr. SHORTT. Some of it I am sure does.

Mr. CHENOWETH. Is there any unemployment in this community right now among coal miners?

Mr. SHORTT. Yes, sir; I understand we have some unemployment. In fact, I know men that aren't employed.

Mr. CHENOWETH. Why are they unemployed if new mines are opening up all the time and production increasing?

Mr. SHORTT. For some reason or other. Maybe the mine they were working for had worked out or their production had decreased to a point where they had to be laid off, and they just have to find another job.

Mr. CHENOWETH. You say coal is the total economy; all of your economy is linked around coal in this community?

Mr. SHORTT. In Buchanan County it is.

Mr. CHENOWETH. How many men would you say would be employed in this county right now? How many coal miners do you have?

Mr. SHORTT. My estimate would be 6,000.

Mr. CHENOWETH. Out of a population of 36,000 you have 6,000 working in the coal industry?

Mr. SHORTT. Yes.

Mr. CHENOWETH. Has it always been that proportion?

Mr. SHORTT. Not always; no.

Mr. CHENOWETH. It is more now?

Mr. SHORTT. Yes, sir. We only began in 1933 in the production of coal.

Mr. CHENOWETH. In other words, you are just on the threshold of your coal development in this accounting, just beginning now to develop it?

Mr. SHORTT. We think so.

Mr. CHENOWETH. I am glad to come into an area like that. I have been in one on the other side so long that I am glad to see some place now where coal is really taking the lead.

Mr. SHORTT. I would like to invite this committee to go and look at the smallest mine in southwest Virginia.

Mr. EDMONDSON. Mr. Jennings.

Mr. JENNINGS. No questions.

Mr. EDMONDSON. Mr. Soule.

Mr. SOULE. No questions.

Mr. EDMONDSON. Thank you very much for your statement. I assure you that if the time does not permit us to visit your mine, we will see that our colleague from this district, Mr. Jennings, gets down and makes a full report to us.

Mr. JENNINGS. At this time Mr. Carson Hibbitts, president of District 28 of the United Mine Workers, was supposed to testify, but I believe Mr. Joe Cridlin, who is attorney for the United Mine Workers, has a statement to present.

Mr. CRIDLIN. Mr. Chairman and gentlemen of the committee, I do not appear as a witness but merely to present a statement for Carson Hibbitts, who is president of District 28 of the United Mine Workers of America and who could not be present today. He had prepared a statement and expected to be here and testify personally, but he was unavoidably detained elsewhere. So, with your permission, I would like to file his statement.

Mr. EDMONDSON. You do not care to read it?

Mr. CRIDLIN. I could, but I doubt I could add to it or detract from it.

Mr. EDMONDSON. If there is no objection, the statement will be made a part of the record at this place. Is there any objection from the committee?

Hearing no objection, it is so ordered.

(The statement follows:)

STATEMENT OF CARSON HIBBITTS, PRESIDENT, DISTRICT 28, UNITED MINE WORKERS OF AMERICA

Mr. Chairman and members of the committee, I appreciate the opportunity of appearing before you on behalf of the membership of United Mine Workers of America, District 28.

We are happy that the Congress of the United States is taking an interest in the welfare of the coal industry and has launched an investigation which, I am sure, will result in helpful legislation. I fear that in the past our National Government has looked upon coal as a stepchild of the fuels and has trained its eyes upon oil, gas, electricity, and atomic energy. Our people need to be awakened to the fact that in our great coal reserves, estimated to be sufficient for our purposes for 2,000 years, are our most valued natural resources. When all our known supplies of oil have been drawn from their earthly reservoirs, our coal supply will be ever present to fill in the gap.

In this day of international tension, the nation that has fuel to turn the wheels of industry is a nation in the most coveted position. Mr. Chairman, the people of this Nation, when they read of the crisis in the Middle East, of the likelihood of the oil of that area being denied the free countries of the world; when they read of the plight of England and Europe concerning fuels, they should thank God daily for our natural resources, the greatest of which is coal. I am sure that this committee recognies the importance of this great commodity. This is evidenced by your being here today. You want to know what you and the Congress can do to assist this basic industry.

In this area, as in most other coal-mining areas, mechanization has caused unemployment. There is nothing wrong with mechanization. Our organization believes that management should be ever vigilant to increase its tonnage.

We should, however, attempt to retain in the indusry our trained men. We should be ever watchful for new markets for this great commodity. We should not only be watchful for a market, we should create the market through research. We should find new uses for our coal. We should sponsor its usefulness in places not now dreamed of.

Research in the coal industry has hardly scratched the surface. Compare the millions expended by the Government in agricultural research to that expended on coal. There are those who would tell us, "Let the industry do its own research." Unfortunately, or maybe fortunately, for the people of this Nation, the coal industry is not in the hands of a few mammoth corporations like most other fuels. Any of the great oil companies could well afford to spend millions in research. Most of our coal mines in Virginia could not liquidate their entire assets and build a plant for coal research. Forty percent of the mines in Virginia produce less than 50 tons of coal per day, and that figure excludes those producing less than 1,000 tons annually.

I suggest to this committee that this is a field in which the National Government should be interested. The Defense Department should be very much interested. The Government should, through cooperation with the industry and our colleges and universities and on its own initiative, begin at once to form an exhaustive research program. Grants to our local colleges and universities should be helpful. I would think that the program should be coordinated through some Federal agency, and probably the Bureau of Mines.

In this area, as I have suggested, mechanization in the mines has caused unemployment. We are losing to the industry valuable trained men that we would sorely need in case of a national emergency. We need to keep the industry alive, thriving and ready for any emergency. In this area where unemployment is most acute, research, demonstration, and pilot plants should be constructed. We people in southwest Virginia do not like to see our neighbors have to pick up their belongings and move North or West for employment after having spent the best years of their lives in the coal industry. That is exactly what is happening. There are today some 4,000 less coal miners in southwest Virginia than in 1950, or a decrease of approximately 30 percent. This has meant that these men must find jobs elsewhere, and if not in our midst, then they must leave us and leave the coal industry forever, seeking employment in the factories of the North.

You will find from the 1950 United tates census that the population in certain of our coal-producing counties in southwest Virginia is decreasing. Statistics of the Virginia Department of Conservation and Development show that the seven coal-producing counties of southwest Virginia—Lee, Scott, Wise, Russell, Tazewell, Dickenson, and Buchanan—showed a stronger rate of growth than the State at large until 1940. From 1940 to 1950, while the State as a whole increased in population by 24 percent, the 6 counties mentioned increased only 6 percent. This shows that the exodus of people from our area had already begun in the 1940's. Since 1950 it is estimated that 6,000 persons have left the area annually. Outmigration has exceeded the natural increase in population and it is estimated that the population of the 6-county area for 1954 had decreased approximately 3,500 after taking into consideration the natural increase. If this trend continues, the people who produced 20 million tons of coal in 1953 will soon be working at other trades. I am afraid that we mountaineers are becoming an extinct race.

We ask you to report to the Congress the need of renewed life in the coal industry, the need especially of this great area in southwest Virginia. We need more markets, more research, cheaper transportation, better methods of mining, and better labor conditions. Mines under contract to United Mine Workers of America pay living wages and the employees enjoy the best that the industry affords. However, we still have some nonunion mines which pay substandard wages and maintain conditions not conducive to the health and welfare of their employees. A poorly paid miner will not remain in the industry even though he can find a job. He is not a happy man, his family is dissatisfied, and he soon finds greener pastures elsewhere. While speaking of research, I would also urge that the health of thousands of miners be considered. In this area we have hundreds of men affected by occupational diseases about which little is known. Silicosis, caused by sand-dust particles lodging on the lungs, has incapacitated many. A healthy, well-paid employee, working under favorable conditions, stays with his trade. He will produce the coal for a nation that needs fuel to turn the wheels of industry and warm its people. We urge you to keep our industry strong.

During World Wars I and II, the Nation's need for energy was supplied by coal. It is highly desirable in the interest of our Nation's security to maintain a healthy coal industry and one that is ready to expand and meet the needs of the Nation in an emergency.

You will, I know, excuse me for being somewhat partial to this area of our country and urging you to do something for us. In Virginia, it is estimated that there are remaining 10,833 million tons of coal. Recoverable reserves would last under the present rate of production for 250 years. Transportation from this area to the industrial cities of the Nation doubles the cost of coal to the consumer. It is practical and reasonable to bring the industry to the source of energy needed.

Again, let me say that I appreciate very much the opportunity of appearing before you, and I wish to thank you again for the interest that you are taking in our problems, and may I assure you of the complete cooperation of the membership of the United Mine Workers of America in this district during your visit here and your investigation of the industry.

Mr. JENNINGS. The next witness is Fred K. Prosser, general coal traffic manager of the Norfolk & Western Railway Co. I believe he is also representing the railroad association today.

STATEMENT OF FRED K. PROSSER, GENERAL COAL TRAFFIC MANAGER, NORFOLK & WESTERN RAILWAY CO., ROANOKE, VA., AND REPRESENTING THE AMERICAN ASSOCIATION OF RAILROADS

Mr. PROSSER. Mr. Chairman and members of the committee, I am here today in sort of a dual role. We had planned to have a representative of the Association of American Railroads here today to offer testimony, but I was advised just day before yesterday that they now requested a final hearing be held in Washington, and at that time they are planning on presenting testimony. At that time they will speak for the railroad industry as a whole.

It is also my understanding that that testimony will be toward House Resolution 400.

I am also here as general traffic manager of the Norfolk & Western Railway. I did not prepare any testimony, but I have spent my entire life in the coal industry or industry allied with it. I have served with the Government on two occasions—once during NRA days and during World War II—in connection with coal.

I have always taken an active part in coal research for the last 20 years. I am a firm believer that if the coal industry is going to make headway, it has got to have adequate research. I think any industry lives on research.

Mr. Hughes made some statements with regard to the Bituminous Coal Research, Inc. Gentlemen, it is rather pathetic when you think of the coal industry working on a budget, I understand, for 1957 of $415,000. That is made up by the coal people, the railroads—we contribute to it—and some of the equipment people, and a few of the public utilities.

As Mr. Hughes says, we need money.

Although the coal industry might be on the up today, we have gone through a lot of low periods, and in order to prevent those low periods in the future, I think we have got to have research and we have got to have adequate research.

The coal industry, as you know, is made up of a lot of individual units. It is mighty hard to get some of those smaller operators, and even some of the big ones, interested in contributing either financially or through personnel to help in this research program.

The present budget is made up roughly—I think I have some figures here.

Mr. EDMONDSON. On the BCR budget?

Mr. PROSSER. Yes.

Mr. EDMONDSON. I think we had a full presentation on their activities.

Mr. PROSSER. I will not go over that then.

Mr. EDMONDSON. Unless you want to make some comments on the specifics of that program.

Mr. PROSSER. I just want to say that budget of $415,000 is made up of about $135,000 by contributions from the coal industry, $70,000 from railroads, coal-carrying railroads, and about $30,000 from equipment manufacturers. It just is not adequate to do the work we want.

Research is badly needed today on more efficient and better methods of mining coal, better methods of transporting coal underground, preparation and utilization, and especially that last, the general utilization. And it takes money to follow that line.

I do not think that any Federal money should be spent on transportation to markets. I think that is a matter that should be left to the transportation people themselves.

Mr. EDMONDSON. Mr. Prosser, the other day we heard one of the leading manufacturers of mining machinery tell us that he thought research in the mining machinery ought to be left to the mining machinery industry. I guess that is typical of the representatives of the different sections of industry, that they would want to restrict the Government.

Mr. PROSSER. I think a lot of money could be spent on mining machinery, and then let him get the benefit of it.

Mr. EDMONDSON. This gentleman from the mining machinery industry evidently felt we ought to spend a lot of money on research in transportation of coal.

Mr. PROSSER. I do not agree with him.

Mr. EDMONDSON. It depends on whose ox is being gored.

Mr. PROSSER. If you spend money in developing mining equipment, he can benefit from it, but if you spend money on competing forms of transportation, the chances are we are going to lose out, because we are so heavily regulated now we cannot turn a wheel unless we run to Washington and ask permission to do something.

Mr. EDMONDSON. Do you have knowledge, Mr. Prosser, of the research program undertaken a number of years ago by the railroad industry to develop a steam turbine engine?

Mr. PROSSER. The Norfolk & Western went with Babcock & Wilcox and with Westinghouse to develop a coal-burning steam electric locomotive, which we have in operation at the present time.

Then there is another project underway, a gas turbine locomotive, and we have been working on that. We are part of that program, too, and have been working on that now for a period of approximately 10 years.

Mr. EDMONDSON. You would not have any objections to Government assistance on research along that line, would you?

Mr. PROSSER. No, sir. We think we have come up with the answer, but we still do not have a locomotive on wheels. We do have a locomotive on wheels that burns coal and generates electricity, and we have that on our own railroad today.

Mr. EDMONDSON. Pardon my interruption.

Mr. PROSSER. That is perfectly all right. Interrupt any time you wish to. As I said, I have no prepared testimony.

Another thing I think should be done: In the event we can get adequate research program underway, I think it should be administered by a commission, something like the Atomic Energy Commission, of the people that are interested in the development of coal. I think that that is essential.

You raised the question just now about export, Mr. Chenoweth. Last year there were 48 million tons of coal exported overseas. That does not include Canada.

Mr. CHENOWETH. That is from the country as a whole?

Mr. PROSSER. From the United States. And when we say overseas, some of it went to Japan for metallurgical purposes and some of it went to Africa, but the bulk of it went to European countries.

Gentlemen, I believe that concludes my testimony. I will be glad to answer any questions.

Mr. EDMONDSON. Mr. Aspinall, do you have any questions?

Mr. ASPINALL. I have no questions.

I would make this observation relative to Mr. Prosser's statement about a duplication of the Atomic Energy Commission: I doubt very much if you would find a very friendly Congress toward that sort of procedure, because that act creating them sets that Commission up and beyond and out of the control practically of Congress, and you would not want that sort of thing.

Mr. PROSSER. No. I do not know just how much control Congress has over it, but I think it should be administered by men that understand the problem.

Mr. ASPINALL. If that is the part you meant, I would suggest the gentleman is on the right track.

Mr. PROSSER. I do not mean to take it out from Congress by any means. I do not want to go that far.

Mr. EDMONDSON. Mr. Chenoweth.

Mr. CHENOWETH. I have been very much interested in your comments on the research program. I see you have given it a great deal of study and thought. I wanted to ask you a few questions concerning the bituminous coal research. I had the impression—I believe I asked the question directly of your executive director, Dr. Rose, how much money he had to spend a year, and I think he told me $1 million was their budget this year.

Mr. PROSSER. That million dollars includes the money, for example, that the Commonwealth of Pennsylvania puts up on joint programs, but the budget itself of BCR on their projects alone is $415,000.

Mr. CHENOWETH. I understood him to say the BCR budget was under $1 million. I do not know where the money came from.

Mr. PROSSER. It is, but some of it is joint projects.

Mr. CHENOWETH. It was $1 million, regardless of where you got the money.

Mr. PROSSER. Yes, with outside concerns. But the research itself that BCR conducts and they have control of, I might say.

Mr. CHENOWETH. They are using the million dollars for research purposes?

Mr. PROSSER. I did not know it was that high.

Mr. CHENOWETH. He told me a million dollars.

Mr. PROSSER. He knows.

Mr. CHENOWETH. That is why I was curious to know.

Mr. PROSSER. I think that does include a lot of outside money that you might say is on a specific project that BCR does not have full control over.

Mr. CHENOWETH. I did not get the details of it, but he mentioned the overall figure.

Mr. PROSSER. I serve on the committee and have for about 20 years now.

Mr. CHENOWETH. I am sure you understand it.

Mr. PROSSER. I know the actual budget is rather small.

Mr. CHENOWETH. The Bureau of Mines is spending about $5 million a year for resarch. The State of Pennsylvania Legislature just appropriated half a million dollars.

Mr. PROSSER. That is right.

Mr. CHENOWETH. I do not know, but other States probably have made similar appropriations. I do not have that information. How much money do you think we ought to be spending on research?

Mr. PROSSER. That is hard to say, but I think the budget ought to be at least several million dollars if you ever are going to accomplish anything.

Mr. CHENOWETH. I asked Dr. Rose what he would do if we would give im an extra million dollars this coming year, and I believe his reply was he could not use that much money.

Mr. PROSSER. You might not be able to use it the first year.

Mr. CHENOWETH. He did not have the manpower, the trained people.

Mr. PROSSER. You have got to get the personnel. You cannot start out next year and spend a million dollars profitably. You have got to set up equipment, and you have got to get the personnel, and that takes time.

Mr. CHENOWETH. We had a representative of the Pennsylvania State University where they have special courses, Mr. Charmbury, I believe, who said that younger men were not being attracted to the coal industry, although the coal industry was offering comparable salaries to other fields, and that only about half of the engineers were going into the coal industry.

I think that you ought to get in touch with him and tell him about these conditions down in this coalfield, and I think you would attract more of these young men to this field if they knew what is going on down here. They have not heard about it in Pennsylvania yet.

Mr. PROSSER. The National Coal Association has a special committee set up to encourage men to study mining engineering. They also have a number of fellowships. That is, today a man can study mining engineering and it will not cost him much. They are doing everything they can to attract engineers into the coal industry, but there is still a shortage of them.

Mr. CHENOWETH. I just have one other observation.

You mentioned this commission. Do you not think the Bureau of Mines could coordinate and supervise all of this research program?

Mr. PROSSER. I would rather see it under the supervision of a commission.

Mr. CHENOWETH. Of a commission.

Mr. PROSSER. Yes, sir. The Bureau of Mines have done a lot of good things, especially on safety, but they certainly have not done much on utilization, and that is where the money should be spent.

Mr. CHENOWETH. They are spending $3 million a year in their Pittsburgh laboratory right now.

Mr. PROSSER. That is on safety.

Mr. CHENOWETH. I thought they said a good deal of it was on the research program.

Mr. PROSSER. We contributed 4 years to the Carnegie Tech coal program. They had a laboratory up there. That folded up due to the lack of money. They were doing basic research to find out what was in coal, how it reacted under certain conditions, what it did in coke ovens. They were doing some wonderful work and finally folded up due to the lack of funds.

Mr. CHENOWETH. I think that is all, Mr. Chairman.

Mr. EDMONDSON. Mr. Jennings.

Mr. JENNINGS. No questions.

Mr. EDMONDSON. Thank you very much, Mr. Prosser.

Mr. PROSSER. Thank you, gentlemen.

Mr. JENNINGS. The next witness is Chris H. Whiteman, director of industrial development, Virginia State Chamber of Commerce.

Chris, we will be glad to hear your statement.

STATEMENT OF CHRIS H. WHITEMAN, DIRECTOR, INDUSTRIAL DEVELOPMENT, VIRGINIA STATE CHAMBER OF COMMERCE, RICHMOND, VA.

Mr. WHITEMAN. Mr. Chairman and members of the committee, Mr. Jennings, and experts who are here today, the Virginia State Chamber of Commerce, organized in 1924, is vitally interested in the continuing economic growth of the Commonwealth and in the welfare of its citizens. During this period the State chamber has made substantial contributions to the development of Virginia into a leading industrial State.

We have been concerned for the past several years with the severe drop in male employment in our coal-producing area and the problems presented in creating job opportunities through acquisition of new industries. Competition for industry among communities, counties, and States is very keen. Industry must locate where it has the greatest opportunity to succeed and not, for local or area economic reasons, where it may at the moment most be needed.

If we are to properly evaluate our industrial assets, we must frankly admit that the topography of many of our coal-producing areas is rather rugged in nature, and from this standpoint and some other essentials of average plant location requirements, at a distinct competitive disadvantage. In some instances, this disadvantage may be in the lack of adequate water and difficult access to major markets for economical assembly of raw materials and distribution of finished products.

On the other hand, we have in this region communities and areas able to meet the most exacting requirements of a number of different types of industry. These communities have excellent water and transportation systems and all other major essentials for industrial development, with very active chambers of commerce, citizen groups,

railroads, utilities, State agencies, the State chamber of commerce, and others working in their behalf for this end.

I think, however, that the long-range solution to this problem lies wholly in the recognition of the fact that coal, and coal alone, must be looked to in the future, as in the past, as the prime factor in the economy of this area.

In 1954 it was my pleasure to visit a number of communities in southwest Virginia and participate in meetings to consider what might be done at a local level to compile and supply information to industries planning to relocate or build branch plants. I should like to quote a portion of the concluding statement I made at that time:

> It would seem to me that the revival and salvation of the coal industry lies wholly in research, and in conclusion I want to leave with you all the thought and suggestion that you folks in this and other coal-producing areas, both within and without the State, see to it that there is formed what might be called a coal research institute for the purpose of discovering new uses for coal as well as processes for the economical extraction of chemicals and other components therefrom.
>
> To erect and staff and operate this fuel-chemical laboratory would entail the initial and continuing expenditure of hundreds of thousands of dollars annually. To raise this huge sum of money would call for close cooperation and harmony between Federal, State, and local government, coal companies, utilities, railroads, labor, and all business and industry directly and indirectly affected by the production and usage of coal.

A major objective of this research should be to create some products that would bring industry to the coal and thereby permit employment of persons heretofore attached to the coal industry, as well as others from the area who each year enter the labor market. We need some of that value added by manufacturing to take place where the coal is mined—not in some distant State.

As has been brought out in these hearings, a step in this direction was taken by the Appalachian Electric Power Co. in locating its newest power-producing facility literally on top of a mine. Similarly, the areas' potential for metals manufacturing has recently been investigated.

Many, many years ago our executive director put forth the suggestion that southwest Virginia might well be the proper location for an integrated steel mill. With coal and limestone available side by side and ore through the Hampton Roads, the three essential raw materials would readily come together with a minimum of transportation cost; the important economic factor being the utilization of many of the hundreds of coal cars which now daily return empty from Tidewater, Va.

We appreciate this opportunity to have made this statement to the committee, and assure you that we shall be pleased to cooperate in any way that you may call upon us so to do.

Thank you very much.

Mr. EDMONDSON. Thank you very much, Mr. Whiteman, and thank you, too, for these very fine publications—the Directory of Virginia Manufacturing and Mining, and your very attractive booklet, Virginia Historyland in Color.

Mr. WHITEMAN. We wanted you to have it. You are seeing part of the beautiful southwestern Virginia. There are other parts of Virginia that are beautiful, with historic attractions, and I do not think that I could properly represent a chamber of commerce without letting you see some of those things.

Mr. JENNINGS. You would admit they are not quite as attractive as southwest Virginia?

Mr. WHITEMAN. If you put me on the spot, as a southwestern Virginian, I would have to say yes.

Mr. JENNINGS. Thank you.

Mr. WHITEMAN. But I have to live all over Virginia, so I cannot be too partial to the part of the country I do love.

Mr. EDMONDSON. Mr. Aspinall.

Mr. ASPINALL. I have no questions.

I want to compliment the witness on a fine statement by the chamber of commerce, and I am especially intrigued and gratified with the statement relative to cooperative interest and cooperative help in such a program as you suggest, because that brings it right down to contributions by the businessmen who depend upon the industry.

Mr. WHITEMAN. Yes.

Mr. ASPINALL. I appreciate that.

Mr. EDMONDSON. Mr. Chenoweth.

Mr. CHENOWETH. No questions.

Mr. EDMONDSON. Mr. Jennings, do you have any questions?

Mr. JENNINGS. No questions.

Mr. EDMONDSON. Mr. Soule.

Mr. SOULE. No questions.

Mr. EDMONDSON. Thank you very much, Mr. Whiteman.

Mr. JENNINGS. Mr. Chairman, we have one more witness to be heard before we adjourn for lunch, if that is agreeable to you, and that is Mr. William A. Fullarton, who is special assistant to the president of the Pocahontas Fuel Co.

I might say, for the benefit of the committee, that this is the mine in which the explosion occurred the other day. Mr. Fullarton was on television and made, I will say, a very fine statement at that time, and I was very impressed with his remarks concerning it.

Mr. FULLARTON. Thank you.

Mr. EDMONDSON. We will be glad to hear you, Mr. Fullarton.

STATEMENT OF WILLIAM A. FULLARTON, ASSISTANT TO THE PRESIDENT, POCAHONTAS FUEL CO.

Mr. FULLARTON. I have no prepared statement. I have a few notes from which I will speak.

Mr. Chairman and members of the committee, I represent Mr. A. R. Matthews, president of the Pocahontas Fuel Co., who expresses his regret at not being able to attend today. He took on another job a couple of months ago that is keeping him quite busy.

The Pocahontas Fuel Co. operates mines in West Virginia, Virginia, and in Tennessee. Most of our production comes out of West Virginia at the present time, although some of the coal is now being produced in Virginia. The openings of the mines are in West Virginia, and consequently, to the public that tonnage is credited to West Virginia. However, we do have a couple of million tons coming out of this State in Tazewell County.

The coal in the Pocahontas seams is some of the finest coal produced anywhere in the world. It is low volatile and is an excellent coking coal, and a large percentage of it goes to steel mills, and to exports.

It is also a very fine domestic coal for home heating, and a substantial portion of our production still goes to that market, although it is declining, as you well know.

It is also, of course, a very fine steam coal, but with its other characteristics for coking and domestic heating, its highest economic use is probably not obtained under the boilers.

It is a fine coal for all uses.

Of course, we are stewards of our natural resources, and all of our natural resources should be put to their highest uses. Some of these uses are not being attained because of lack of research.

The coal industry generally has a reputation of being very delinquent in starting research programs, and I for one believe that is true. It is not putting enough money, time, and effort into that program.

We, as a company, endorse the statement of policy which was adopted by the board of directors of the National Coal Association on January 9, and since it is a part of the record we will not repeat it. But we do believe that in such a program, such a large program, involving millions of dollars, that it should be very well thought out and planned before we go off in all directions trying to do all things with the public's money at once.

Statements have been made, and we concur in them, that the future of the coal industry at the present time looks very good.

As you people well know, and our auditors here know, the coal industry's fortunes have been up and down, generally considered to be boom and bust.

About 2 years ago, they started to rebound, a low of less than 400 million tons of production in the year 1954. The increased demand crept up on us. The export market started to develop, and it had developed to quite a point before we realized it was going to go higher and possibly would be a continuing demand.

As you know, last year about 40 million tons were exported overseas. We believe that will increase.

Of course you, as representatives of the people in Washington, know very well better than we that foreign relations and foreign conditions will have a great effect on the export market. Most of the export coal now is being purchased in this country with earned American dollars. If the foreign countries for any reason do not have American dollars to buy our coal, the export market will decline or, in the alternative, the Government of the United States will have to provide the dollars for the foreign countries to buy our coal. That is something for you gentlemen to determine in Washington.

We also know that the electric utility business has increased its burn of coal. We believe that that is going to double or triple in the next 25 to 50 years.

Of course, the fortunes of the electric utility industry will depend a great deal upon the fortunes of the country.

We do have the future of atomic energy to consider in this field, however, but at the present time we are not too badly frightened by that possible complication.

We have lost most of the railroad fuel market and a large part of the domestic fuel market, but they have been offset by the increases in the electric utility burn, the increase in the steel burn, and the foreign export market. The fortunes of these markets, of course,

will affect the coal industry, and if we put all of our eggs in these three baskets—electric utilities, steel, and export—we may not be on the soundest basis on which the coal industry should rest. So there is a great need for research, and we believe it should be carried on.

We believe, however, it should be well thought out. Therefore, we endorse the statement of policy of the National Coal Association where a commission will be appointed representing the industry, the Government, major equipment suppliers, and all concerned with the problem to appraise the research that is being done at the present time, the research that is needed, and then to develop a plan which will be followed in a well-coordinated and systematic manner.

Our company is a supporter of the Bituminous Coal Research and the locomotive development research programs. We believe that they should go on. However, there is one drawback there: that they are voluntary, and any company, any member supporting those programs can pull out whenever they wish. That is not conducive to long-range research, which is needed.

As you know, some research projects need 10 to 20 or 25 years, with no definite assurance of success. So it would be well to have a little better conceived and supported program with the cooperation of all concerned, including the Government.

Thank you very much.

Mr. EDMONDSON. Thank you, Mr. Fullarton, for your statement.

Mr. Aspinall, do you have any questions?

Mr. ASPINALL. As I understand it, Mr. Fullarton, it is your statement that the percentage of 9 to 12½ percent, approximately, of the coal production in the United States for export is one of the reasons for this upturn in the welfare of the coal industry. Is that correct?

Mr. FULLARTON. That is correct, especially so in southern West Virginia, southwest Virginia, and eastern Kentucky fields, where most of the export coal comes from.

Mr. ASPINALL. And it is also your understanding that that constitutes a fairly sizable amount of our foreign-aid program; is that correct?

Mr. FULLARTON. When you speak of foreign aid, you mean Government-financed?

Mr. ASPINALL. That is right.

Mr. FULLARTON. Some foreign exports of coal are now financed by the Government, but not nearly so much as was financed several years ago.

Mr. ASPINALL. Let me ask you this:

Is it not true that if we did not have this economic aid to foreign countries at the present time, you would not have an appreciable amount of this export business?

Mr. FULLARTON. I will say this, Mr. Aspinall:

If we had not had the Marshall plan and the economic aid after the war, we would not have this coal business, because then the steel mills and industrial plants of Europe were rehabilitated and are now able to buy our coal and help our industry. I am not sure at the present time just how much the present economic aid helps the coal industry.

Mr. ASPINALL. To whatever extent it is, it is a subsidization by the Federal Government of the coal business. Is that right?

Mr. FULLARTON. It was; yes.

Mr. ASPINALL. And still is to whatever percent that might be?

Mr. FULLARTON. To some extent.

Mr. ASPINALL. You are in favor of that, in spite of the fact there is a great deal of criticism about the budget as proposed by the President?

Mr. FULLARTON. I personally—not speaking for my company now or Mr. Matthews—feel that some Government aid and foreign economic aid should be given to the countries which are willing to help themselves, and to set a firm base for industrial and business development of those countries.

I spent a couple of years in the coal branch of ECA and a couple of years in the price branch of OPS, where I got some firsthand information on our foreign aid.

Mr. ASPINALL. Your company and officials and employees are of the same opinion—that it should be continued?

Mr. FULLARTON. As I said, I am speaking for myself, not for my company or Mr. Matthews, but I believe he will concur to some extent in my remarks.

Mr. ASPINALL. Do you know whether or not your company, Mr. Fullarton, is a member of the United States Chamber of Commerce?

Mr. FULLARTON. We are a member of the Bluefield Chamber of Commerce, Bluefield, W. Va., and they are members of the United States Chamber of Commerce.

Mr. ASPINALL. That is all.

Mr. EDMONDSON. Mr. Chenoweth.

Mr. CHENOWETH. I have been interested to know the size of your company, the number of employees, and the amount of coal you produce.

Mr. FULLARTON. Last year we produced about 10½ million tons in the 3 States which I mentioned, West Virginia, Virginia, and Tennessee.

Mr. CHENOWETH. How much of that in Virginia?

Mr. FULLARTON. I would guess about 2 million tons last year. Our engineers have to make a calculation on the coal which comes from that part of Virginia, and comes out through the West Virginia entrances.

Mr. CHENOWETH. How old a company are you?

Mr. FULLARTON. Our first mine was opened in Tazewell County, Va., in 1882. It was the first mine opened in the Pocahontas field. Our present company name has been taken from the name Pocahontas, of course, and we are successor to that company. We have about 4,000 employees.

Mr. CHENOWETH. Do you have any unemployment in your company?

Mr. FULLARTON. Of course not in the company. We have some unemployment in our mining towns which results from mechanization. How much of that unemployment remains, I do not know, because many of the men laid off went into retirement, and many of the younger fellows went to Wilmington, Detroit, Cleveland, and other places and got jobs.

Mr. CHENOWETH. You are not attracting young men into the coal industry?

Mr. FULLARTON. Not to a large extent, for this reason, Mr. Chenoweth:

When we mechanized the mines, the men who were laid off went on panels under the union contract, and those men in different classifications remain on those panels, and when we need men or have to hire new men, we have to draw men from those panels. In other words, we have to rehire the men who were laid off.

Mr. CHENOWETH. I see.

Mr. FULLARTON. For that reason we are not able to hire many of the younger men. That is constituting a problem because, as you can see, our average age of employees is going up. And with mechanization, we need a little different type of man than we had under hand-loading methods.

Mr. CHENOWETH. You have some problem then in getting young men and training them?

Mr. FULLARTON. That is right, and our company and many others have training programs set up for our employees and are going to expand those training programs to a large extent.

Mr. CHENOWETH. You feel very optimistic about the future of the coal-mining industry?

Mr. FULLARTON. I feel very optimistic about it.

Mr. CHENOWETH. Regardless of whether or not they have any additional research program?

Mr. FULLARTON. With reservations. As I mentioned, some of our market can be affected by foreign affairs, especially the export market. Then we get into competing fuels, oil, natural gas, atomic energy. If they get preferment through Government regulation and Government funds for research, they can easily hurt our industry.

Mr. CHENOWETH. Was last year your biggest year in production?

Mr. FULLARTON. Last year I think was the largest year of production for our company, but that must be qualified because we had more mines and through mergers had acquired additional mines.

Mr. CHENOWETH. Well, there is more business.

Mr. FULLARTON. More business; yes.

Mr. CHENOWETH. You had to have more labor to take care of your demands for coal.

Mr. FULLARTON. That is right.

Mr. CHENOWETH. I wish there were as bright prospects in other areas as they are here. They are not quite so good in some of the other areas. You are very fortunate here.

Mr. FULLARTON. I spent 6 years in central Pennsylvania, 7 years out in the Middle West in coal, and I know what you are talking about.

Mr. CHENOWETH. That is all, Mr. Chairman.

Mr. EDMONDSON. Mr. Fullarton, I understand you have determined, with regard to your explosion, a very unfortunate disaster in your mine just this last week or so, that it was a ventilation failure that was responsible. Is that information correct or not?

Mr. FULLARTON. We do not know yet what condition allowed the gas to accumulate. We do know it was a gas explosion, and the manner of its accumulation is still unexplained, the manner of its ignition is still unexplained.

The Federal mine inspectors, the State mine inspectors, representatives of the United Mine Workers of America, and company officials, were an investigating team and spent 4 or 5 days in the mine.

Then on Thursday of last week, the entire day was spent in a formal hearing conducted by the chief of the Department of Mines of West

Virginia, the board of which questioned the employees and officials of the mine and the mining company. The findings of the Federal and State inspectors have not yet been released.

In the inquiry, of course, they tried to determine what might have happened to the ventilation system, and certain theories were explored, including that of opening two airlock doors at the same time, which would have permitted a shortcircuiting of the ventilation, flow of air, and which might have allowed gas to accumulate in this section of the mine, which might have then been ignited. But we think something must have happened possibly to the ventilation system, but, as I say, it has not yet been definitely determined.

Mr. EDMONDSON. Do you think that there is need for an expansion of research by the Bureau of Mines into this question of the nature and causes of explosions in mines?

Mr. FULLARTON. I am not familiar with exactly how much research the Bureau of Mines has done along that line. I think that some work has been done. I think possibly some research could be done. I think that if the National Coal Association's statement of policy is followed, and a research committee is appointed, that should be looked into.

There are so many things in a mine which could allow gas to accumulate—the movement of the mountain and other things—that possibly that could be a very good line for research.

Mr. EDMONDSON. In your mines, have explosions been the major cause of casualties?

Mr. FULLARTON. I am not sure. Going back to 1882, we have had some explosions. In fact, the first one occurred just about 1 year to the day after the first coal was shipped from the mine back in 1884. The last explosion we had was in 1932.

Now, whether the sum of the victims of explosions outnumber those killed in ordinary operation, I really do not know.

Mr. EDMONDSON. I was interested because we heard the other day on our visit in Pennsylvania that most of their mining casualties in recent years in Pennsylvania had been from mechanical failures of one kind or another, or industrial accidents with machines. I just wondered if your experience was similar—that that was a bigger disabler and crippler than anything else.

Mr. FULLARTON. I believe you would find probably in our mines and most mines in this area that roof falls would cause possibly the larger percentage of deaths from any one factor. There might be some room for research there in what causes the roof to move in certain manners and what could be done to support the roof.

Mr. EDMONDSON. Is roof bolting being generally practiced in your mines?

Mr. FULLARTON. Yes, sir; to as large an extent as possible.

Mr. EDMONDSON. Mr. Jennings.

Mr. JENNINGS. No questions.

Mr. WHITEMAN. Could I come back to the stand for one moment, Mr. Chairman?

Mr. EDMONDSON. If the committee is through with Mr. Fullarton. Thank you, Mr. Fullarton.

We will hear from Mr. Whiteman.

FURTHER STATEMENT OF CHRIS WHITEMAN

Mr. WHITEMAN. I am a little bit concerned because of the questioning seeming to indicate that, because our coal production is increasing, it follows that we have full employment in our coalfield area. I do not believe that is so. I think you will find that our economy could be and should be developed more and more, and must be developed more in order to provide jobs for those who I know are presently unemployed, and for those who I mentioned are coming on the labor market from year to year, especially these young people.

I would like to suggest for the committee's consideration, if it is proper, that they might request Mr. Jennings to get a statement from the Virginia State Employment Service with respect to the actual employment conditions in the coalfields as they exist today, and that that be made a part of the record.

Mr. EDMONDSON. I think that is a constructive suggestion, and if one of our later witnesses today does not provide us with that information on employment and unemployment, we will certainly follow up on it and try to get it for the record. (See p. 151.)

Mr. WHITEMAN. Thank you.

Mr. EDMONDSON. Are there any further witnesses this morning?

Mr. JENNINGS. There are no further witnesses.

If I may, I would like to recognize Judge A. G. Lively, who is in the audience. He is a member of the board of conservation and development.

Mr. EDMONDSON. We are very happy to see you, Judge, and we will be happy to hear from you this afternoon if you would care to testify.

I think we have 8 or 9 witnesses for the afternoon.

The committee will stand in recess until about 1:45.

(Whereupon, the subcommittee recessed, at 12:45 p. m., to reconvene at 1:45 p. m., this same date.)

AFTERNOON SESSION

Mr. EDMONDSON. The committee will come to order.

I would like to observe, before we begin hearing witnesses again, that if the coal down here is as good as the hospitality that you folks certainly will probably be taking over the market for the rest of the country very shortly. We certainly enjoyed the luncheon and the opportunity to get better acquainted with some of your fine people in this district.

I am pleased to note for the record the presence of Mr. Thomas W. Hunter, Chief of the branch of Bituminous Coal Economics and Statistics, of the Bureau of Mines. We are happy to have you with us, Mr. Hunter, and will be pleased to have you supply information that you feel is pertinent at any time something comes up you feel is something that the committee would be interested in.

Mr. HUNTER. I would like to say that I am here merely as an observer for the Bureau of Mines, rather than a witness. The Bureau, of course, is particularly interested in these hearings, and we consider the work of your committee to be of very great importance, not only to the coal areas but to the industry and the Nation.

To the extent that the need for information develops during the course of these hearings, we want to be of service to make it available if we can.

Mr. EDMONDSON. Thank you, sir. The Bureau has always been most helpful to the entire committee, and we are very glad to have you present.

Pat, would you call the first witness?

Mr. JENNINGS. The first witness is Dean John Whittemore and Professor Holland, both of Virginia Polytechnic Institute. Mr. Whittemore is dean of the school of engineering, and Professor Holland is head of the department of mining.

I might say this is my alma mater, and I am particularly pleased to have them come and appear.

Mr. EDMONDSON. Dr. Whittemore, is Professor Holland to appear with you?

Mr. WHITTEMORE. I thought he could appear right after, if you are willing.

Mr. JENNINGS. I thought maybe you might as well collaborate.

Mr. WHITTEMORE. In a sense, we will, but I believe he is going to be able to give you more information than I am.

Mr. EDMONDSON. You may proceed.

STATEMENT OF JOHN W. WHITTEMORE, DEAN, SCHOOL OF ENGINEERING AND ARCHITECTURE, VIRGINIA POLYTECHNIC INSTITUTE, BLACKSBURG, VA.

Mr. WHITTEMORE. My name is John W. Whittemore. I am dean of the school of engineering and architecture, and I am director of the Virginia Engineering Experiment Station of Virginia Polytechnic Institute.

I ought to give you a little background of the school, I believe, because it will be pertinent to any possible research.

We have 14 departments in our school of engineering and architecture, including agricultural engineering, architecture, aeronautical engineering, ceramics, chemical, civil, industrial, mechanical, metallurgcal, and mining engineering. Through these several departments, we are able to do work in many fields, and many fields that are interested in the utilization from production of coal.

Through the experiment station, which ties in very closely with the educational phase, we are able to do research work on these various aspects of the utilization and production of coal.

For instance, our department of metallurgical engineering, through their work in foundry and steel production, are vitally interested in metallurgical-type coal and the production of that type of coal. Our mechanical engineering department, in the power and fuel side of it, are vitally interested, of course, in principally the utilization of coal.

Our chemical engineering department is interested in utilizaton for the chemcal industry.

As we operate, we have our graduate school in all of these departments, and it again is tied closely with the education and research. It gives us an advantage in that we can use graduate students in completing any projects, for instance, on coal.

Realizing that for the Virginia economy we needed to be interested in the coal economy of southwest Virginia, we have for the past 25

years carried on some research on coal, both in the utilization and production.

I believe we have nine bulletins relative to coal, which I brought with me, and I would like to leave these with the committee. Then we have a large map of the State of Virginia that shows coalfields, and all other mineral resources of Virginia.

Now we would like to think that we have done considerably for the coal industry, but we have never felt that we were doing as much as we ought to do or as much as we want to. We have had meager funds. The State legislature gives us an appropriation of $40,000 for the experiment station each year, and it is necessary for me to use that $40,000 over all of these various fields that I have enumerated.

We have one man that is employed on the experiment station on a half-time basis as a mineral technologist. He is spending some time on coal.

We have in our experiment station a budget of about $200,000 a year, and the difference between $40,000 and $200,000 is made up by contracts with industries of various kinds, and contracts with the Federal Government, such as the Office of Naval Research, the Ordnance Department, and the Bureau of Yards and Docks.

Mr. EDMONDSON. Have you had any contracts from Bituminous Coal Research?

Mr. WHITTEMORE. No, we have not. What we have done on coal, we have had to take out of our operating funds in the several departments that did any research on coal.

Mr. EDMONDSON. Have you had any funds at all during your memory of the schools specifically earmarked by the legislature for coal research?

Mr. WHITTEMORE. No.

Mr. Caldwell mentioned this morning that they contributed a small amount toward one project. The Government set up a thousand dollars to help us on that particular project, and we did have to spend about 8 or 9 thousand of the experiment station funds to complete the work. However, we are continuing that work on that particular low temperature carbonization of coal, and hope that we are going to have some good results coming from it.

We hope that some way or another we can get more funds so that we can enlarge the research program that we have already started. We feel that with the competent staff in engineering we have that we could do this, but it is going to—I do not need to tell you gentlemen that—it is going to take money if you want to go on and expand the research and accomplish anything within a limited length of time.

As we have gone along so far, it has been very haphazard, using your operating funds that were actually set up for other uses, making it very difficult to complete the work that you would like to do.

So we at Virginia Polytechnic Institute invite any help that we can get, and we do want to cooperate with this committee in any way we can.

As I said, I did not bring a prepared statement, but Professor Holland, the head of our department of mining engineering, who will follow me, does have one.

I would like to just mention this, because in modesty I know he will not tell you that he is considered an expert on coal mining, operation of mines, and does some consulting work for various coal companies.

He has written a large number of articles that have been printed in the technical journals, and I am going to let him follow up now on the more technical aspects of our work.

Mr. EDMONDSON. With the permission of the committee, we will hear Professor Holland and then question both him and Dean Whittemore together.

Thank you for the publications. Without objection, they will be made a part of the file of the committee.

(The documents will be found in the file of the committee.)

STATEMENT OF CHARLES P. HOLLAND, PROFESSOR OF MINING ENGINEERING, VIRGINIA POLYTECHNIC INSTITUTE, BLACKSBURG, VA.

Mr. HOLLAND. Mr. Chairman and members of the committee, my name is Charles P. Holland. I am professor of mining engineering and head of the same department at Virginia Polytechnic Institute.

I appear here as one who is interested in the necessity for research, and also as one who is interested in actually performing research for the coal industry and for the good of the Nation at large.

I might start out here by making a few remarks about the fossil fuels.

The so-called fossil fuels are among the most valuable mineral deposits in the United States. From them, in the years to come, we must obtain a great deal of our fuel for energy as well as essential raw materials for much of our vast chemical and metallurgical industry.

The high standard of living of the American people at the present time, and insofar as we can see now for many years to come, depends to a great extent upon an economical and adequate supply of these materials. Such being the case, these resources are among those that must be given our most careful attention and best thought, both as to exploitation and utilization.

Known fuel reserves in the United States are vast. Based on the 1953 United States Geological Survey estimates and other information, our known fuel reserves are estimated to be as follows in terms of tons of bituminous coal equivalent:

	Millions
Coal, all ranks	1,575,000
Petroleum, crude	6,000
Natural gas	9,000
Natural gas liquids	1,000
Oil from oil shale	231,000
Total	1,822,000

These figures, however, do not indicate correctly the total amount of fuel present because the proved petroleum and natural gas present is not the total amount present. Estimates of how much of these fuels actually present vary, but we will assume they are five times present proved reserves. Such being the case, then, probable mineral fuel present in terms of bituminous coal is in the order of 1,850 billion tons.

This is a large reserve, but in 1954 we used an equivalent of about 1.5 billion tons of bituminous coal. This means about 1,200 years'

fuel supply at our present rate of use, if we use all the fuel in the ground. This we cannot do because some must be lost in mining. Moreover, since 1935 our energy use has doubled, and since 1899 it has increased fivefold.

Even though these rates of increase may not apply to the future, at best our fossil fuel supply is sufficient to supply our estimated needs for a few hundreds of years, rather than a few thousands, as we are frequently told. Just how long it will last will depend, among other factors, upon how completely we mine our fuel reserves and how efficiently we use them. These in turn will depend to a considerable extent upon an effective and efficient research program on fuel production and utilization.

Of our fossil fuel reserves, coal conservatively is estimated to comprise something over 84 percent. In my opinion, within the near future—5 to 10 years—coal will be called upon to shoulder an ever-increasing part of the energy and raw material needs of the Nation. For this reason, in the light of the foregoing information, coal needs and deserves the development of a more comprehensive research program. Such a program should encompass the production, utilization, and marketing of coal, as well as the hazards attendant to employment in the industry.

The largest deposits of high-grade, high-rank coal in the United States are located in the Appalachian Basin. This basin extends from northeastern Pennsylvania to west central Alabama, and passes through the following States: Pennsylvania, West Virginia, Maryland, Ohio, Virginia, Kentucky, Tennessee, Georgia, and Alabama.

In this basin is found our largest deposits of high-grade coking coal suitable for metallurgical use. Of the various types of coal in the United States, those having satisfactory coking properties, are relative to the demand, in shortest supply. That is, as our coals are slowly mined to exhaustion, the supply of those of coking quality will probably become critical first. These coals, from the standpoint of the economy of the Nation, are our more important ones and, in my opinion, should receive a great deal of attention in our research effort.

Lying in southern West Virginia, western Virginia, eastern Kentucky, and central Tennessee are deposits of close to 150 billion tons of these high-rank, high-grade coals, much of which consists of coals possessing excellent coking properties.

In addition to these, in western Virginia are perhaps 1 billion tons of anthracite or semianthracite, and in eastern Virginia are perhaps 500 million tons or more of bituminous coal.

Included in the bituminous coal listed above are perhaps some 25 to 50 billion tons of the world-famous and very valuable low and medium volatile coals. Lying close at hand to a research center established here, therefore, would be a vast supply of all types of high-rank, high-grade bituminous coals available for utilization research.

Needless to say, information developed here relative to utilization would apply to similar coal throughout the United States.

For research on coal geology in this area, we have coal—the Virginia anthracites—as old as the Pocono rocks in the lower Mississippian—perhaps the oldest coal in the country—to coal found in the Triassic rocks—perhaps the only coal of this age in the country—of eastern Virginia.

We have coal from anthracite rank to high volatile bituminous coal lying under some of the thickest as well as some of the thinnest cover in the country, and coals which have been subjected to the most complicted faulting and folding found in the United States. If any area of the country affords a better opportunity for research of this kind, it is not known to me.

Insofar as conditions for mining research are concerned in this area, coals have been and are being mined under some of the deepest cover in the United States. In part of this general area, the rocks within which the coal beds are held contain some of the thickest and strongest sandstones found anywhere in North America, as well as roof and floor rocks equal to the weakest found in the country. Part of the area contains coal beds that are known to be among the gassiest found anywhere in the world. Some of the thicker, as well as some of the thinnest beds being mined in the United States are being produced in this area.

Coal is being mined in beds lying nearly flat, as well as beds dipping as high 40°. Beds are being mined having some of the most acute water problems found in bituminous mining, as well as some of the driest beds in the country. In this area is to be found one of the largest mine drainage tunnels in the United States and perhaps in the world.

And finally, in the field of mining, we have in this area some of the largest, best equipped, best engineered and managed coal mines in the world. The area, therefore, offers almost unlimited opportunity for research in production of coal, as well as that looking toward the improvement of mine safety.

In addition to the things cited above that are favorable to a coal research center in southwest Virginia, we have in the Virginia Engineering Experiment Station in the Virginia Polytechnic Institute one of the larger and better equipped research centers and engineering schools available.

The institute is willing to help in coal research and has had a long interest in the coals of this area. A review of some of the coal research at this institution shows the following master of science and doctorate theses. Many of these have been published as technical papers given before learned societies, and articles published in scientific and engineering journals.

1931: A study of the sulfur forms in southwest Virginia coals; Almon V. Warren

1932: The analysis of gaseous portions of the volatile matter of Virginia coals given off or released at several different temperatures; J. L. Porter

1932: Structural investigation of a proposed steel head frame for the Merrimac Mining Co. of Merrimac, Va.; M. V. Olgerd-Loukomsky

1933: Briquetting coal without a binder; B. L. Flynn

1934: The suitability of Virginia coals for underfeed stoker-equipped plants, Alvin Johnson, W. Grimm, Jr., S. R. Pritchard, Jr., O. A. Moomaw, F. S. Rorp, Jr., and R. I. Willis

1935: The analysis of the ash from southwest Virginia coals for the identification, determination, and extraction of germanium; C. M. Hughes.

1937: Grindability of Virginia coals; F. E. Watkins

1937: Grindability of Virginia coals; A. J. Chewing, III

1939: Application of the anthratube to the use of local anthracite coal; W. C. Barclay and G. C. Dixon

1948: A modern mining operation for the Virginia semianthracite coalfields; E. V. Bowman

1950: An investigation to determine the most economical culm coal for No. 6 boiler of the Virginia Polytechnic Institute central heating and power plant; H. W. Dutton, Jr., J. G. Hood, Jr., and C. W. Kilby.
1950: An investigation on the combustion of individual coal particles; L. J. Pan and H. C. Wong
1950: Determination of mixtures of Merrimac culm and bituminous coal for No. 6 boiler; Oscar Coplon, G. R. Cottingham, and J. D. Murphy.
1951: Some factors in the use of roof bolts for mine roof control; Jan J. Wojciechowski.
1955: The concentration of germanium in coal; Herbert L. Schaaf, Jr.
1955: A study of problems encountered in multiple-seam coal mining in the United States; David T. Stemple
1956: Mineralogical investigation of coal mine roof shales in part of the southern Appalachian coalfield; Carl T. Myertons

The following lists the publications of the Virginia Engineering Experiment Station on coal and mining research:

No. 5: Distribution of Ash in the Merrimac Coal Seam, by F. H. Fish and J. A. Addlestone
No. 7: Sulfur Forms in Virginia Coals, by F. H. Fish and J. A. Addlestone
No. 12: Remmey Oxy-Acetylene Test Furnace for Coal Ash Fusion Point Determination, by F. H. Fish, F. M. Taylor, and J. L. Porter
No. 16: The Gases Liberated From Virginia Coals by Thermal Decomposition at Various Temperatures, by F. H. Fish and J. L. Porter
No. 20: The Agglutinating Values of Some Lower Volatile Virginia Coals, by F. H. Fish
No. 74: Hydrogenation Studies on Midlothian Coal, by F. W. Bull
No. 83: Map, Virginia Mineral Resources, by B. N. Cooper and R. V. Dietrich.
No. 94: Washability Studies of Four Virginia Coals, compiled by Carl Shelton, Jr.
No. 107: A Study of Problems Encountered in Multiple-Seam Coal Mining in the Eastern United States, by D. T. Stemple.
No. 112: A Study of the Ultimate Strength of Coal as Related to the Absolute Size of the Cubical Specimens Tested, by F. L. Gaddy
No. 36: The Fundamentals of Mine Haulage, D. L. McElroy—Engineering Extension Division Series

Currently, the following projects pertaining to coal are underway:

1. Washability studies of Virginia coals
2. Application of the principle of production engineering to coal mining
3. Roof and pillar action in coal mining
4. Occurrence, cause, and prevention of rock bursts in coal mines.
5. Use of diesel power in underground coal mines
6. Strength of coal mine floors
7. Permanent support of the overburden on coal beds
8. Properties of coal mine roof and floor rocks
9. Low-temperature carbonization of coal
10. Investigation looking toward the establishment of a high-temperature coal carbonization program at VPI.
11. Combustion characteristics of Virginia coal.

The foregoing lists of research themes and research publications at the Virginia Polytechnic Institute indicate that the institution has encouraged coal research for many years. Since no particular kind of research is compulsory at the institute, the foreging lists demonstrate that the staff also is interested in coal research. It also shows that this institution has a staff that is trained and experienced in this kind of research.

Perhaps the foregoing material can be briefly summarized in the following statements:

1. Our so-called fossil fuels are among our most valuable and necessary mineral deposits.

2. The known reserves of these minerals are vast but the rate of use is high and increasing rapidly. This indicates that the life of these resources is best estimated in terms of a few hundred years rather than a few thousand years.

3. The life and usefulness of these reserves can be extended by research on production and utilization methods and practices. Since coal is the most important of these, it is desirable that a more comprehensive research program on its production and utilization be gotten under way at once.

4. If such a program is gotten underway, southwest Virginia offers an excellent site for a research center of this kind for the following reasons:

(*a*) The vast deposits and different varieties of the most important high-grade, high-rank coals afford excellent opportunities for utilization research.

(*b*) The geology of the deposits is such that excellent opportunities for research in the geology of coal exists.

(*c*) The natural conditions prevailing in the area, as well as the type of coal available, afford excellent opportunities for research on the technology of coal production and upon personnel hazards in coal production.

(*d*) Available for assistance in such a program is the Virginia Engineering Experiment Station of the Virginia Polytechnic Institute. This institution for a long time has fostered coal research and has a staff that is interested and trained and experienced in coal research.

I might add one more thing, that if the Congress of the United States is planning to expand the research program in this country and is considering the establishment of a new center for coal research, we invite you to consider the advantages to be had by locating it in southwest Virginia. Further, we suggest that you consider the use of the facilities and skills available at the Virginia Polytechnic Institute in such a program.

Thank you.

Mr. EDMONDSON. Thank you, Professor Holland, for a very fine statement.

Do you have any questions, Mr. Aspinall, of Dr. Whittemore or Professor Holland?

Mr. ASPINALL. First of all, I wish to compliment the witnesses that have appeared here today, and especially Mr. Hughes and Professor Holland, who have followed the rules of the House concisely. Maybe that is due to the urging of our colleague, Mr. Jennings. But our rules do call for the preparation of statements and the testimony by oral presentation to those statements, and these two gentlemen have done a mighty fine job, in my opinion.

I have two questions.

Do either of you gentlemen know what percentage of Virginia's overall general economy in 1955 or 1956 was dependent upon the development of its coal resources?

Mr. WHITTEMORE. No.

Mr. HOLLAND. I do not think I have those figures available, but I will say this: That the coal production in this State constitutes a substantial contribution to our economy.

Mr. ASPINALL. Do you believe that the contribution by the Commonwealth of Virginia of $40,000 is a sufficient contribution to the work necessary to the development of this great resource?

Mr. WHITTEMORE. I can answer you that. I wish that we could get a very much increased appropriation, because not only could we carry on a whole lot more research in coal, but in other fields that are very important in the economy of the State as well.

Mr. ASPINALL. I think you can see the drift of my questioning.

Mr. WHITTEMORE. Yes.

Mr. ASPINALL. You are asking for Federal participation. I just wish to know whether or not you men close to the problem feel that the Commonwealth is doing its share at the present time. I take it you feel that the Commonwealth could do more.

Mr. WHITTEMORE. We always try to get more help. I will say that.

Mr. HOLLAND. I might put it this way: We would like to see them do more.

Mr. ASPINALL. The next question has to do with the question of procedure. It was suggested this morning by one of the witnesses that perhaps a Commission, an Advisory Commission, I took it, something like the Atomic Energy Commission, or an Executive Commission in an executive department of Government handling this research program would be advisable. Such a commission, of course, would proceed with contract authority and would contract with different institutions, public and private, and otherwise, if there is a combination, to do the work rather than to have the work done by the Bureau of Mines as the governing institution.

Would either one of you gentlemen care to state your position on which avenue of approach you think would be better to take?

Mr. WHITTEMORE. Of course, I am somewhat prejudiced on that subject in that I feel that an institution such as ours, or Penn State, or the University of West Virginia already have personnel well trained in these fields to direct the work. We have large graduate student groups who can also take a principal part in this kind of a program, and we would be in a position, because of both of those factors, to do a good job and help the industry, with a much lesser expenditure than would be necessary where you set up a separate organization.

Does that answer your question?

Mr. ASPINALL. That answers my question. In other words, rather than give the responsibility to a Federal bureau to do the work—they might be part of the advisory commission, but to do the work your suggestion is that we proceed through contracts?

Mr. WHITTEMORE. I think that would be ideal.

Mr. ASPINAL. Realizing, of course, that there are certain contractees who are private individuals or institutions, like Koppers, and so forth, who might be called in to do a particular job.

Mr. WHITTEMORE. Certainly, like Mellon Institute.

Mr. ASPINALL. That is not necessarily minimizing any of the activities that the Bureau of Mines has had heretofore——

Mr. WHITTEMORE. Oh, no.

Mr. ASPINALL. But it seems to some of us that perhaps it is an approach to trying to solve a particular problem rather than to permit a Federal bureau to work on it as its funds and its personnel might see fit.

I think that is all.

Mr. HOLLAND. May I say one word on that. It happens I have had a chance to read, in the last hour and a half, the statement of the National Coal Association, and I think it is a very fine statement. I notice they provide on the Commisison for representation by the industry, by the Government, and for other interested parties.

To this committee I would like to suggest the importance of considering those who are employed in or working for or concerned with educational institutions that feature research programs in total. I think that those people on the Commisison could make a very substantial contribution to the working of the Commission and to the actual progress of research and effectiveness of research. They perhaps would bring sort of a disinterested attitude that would be very valuable to us.

Mr. EDMONDSON. Mr. Chenoweth.

Mr. CHENOWETH. What would you think about the Bituminous Coal Research, Inc.? Could that agency be used for this work? They are spending about a million dollars a year now, as I understand it.

Mr. WHITTEMORE. I will pass to Mr. Holland because I know he is more familiar with just what they are doing.

Mr. HOLLAND. There is no question in my mind but what the Bituminous Coal Research could do a substantial part of it. However, I do not think it would be necessary for them to expand into every field, and perhaps they may not be able to handle every field.

Mr. CHENOWETH. I did not mean to do all of it. I tried to figure out the other day up in Pennsylvania just how much was being spent on research on coal now.

Mr. HOLLAND. I can give you the figures assembled——

Mr. CHENOWETH. How many million dollars does it amount to a year? Did you ever figure that out?

Mr. HOLLAND. This has been assembled, I believe, by the Mining Congress through the Bituminous Coal Research, and I believe for 1955 it added up to something like an estimate of $17 million.

Mr. CHENOWETH. Seventeen million?

Mr. HOLLAND. That includes all sources except one source of research, which I would call your attention to, and that is these operating companies throughout the Nation are busy all the time in a kind of research, an application of the things we have, in the development of new mining methods, and so on, and that would add several million dollars a year to that figure.

Mr. CHENOWETH. Would you say we are making substantial progress in this research field or not?

Mr. HOLLAND. I think we are making substantial progress, but, as I pointed out in my statement, I think the urgency of the situation is such that we should greatly intensify our efforts. We are making progress, but in comparison to our needs and the possible uses of our mineral fuels, we are not progressing fast enough.

Mr. CHENOWETH. Who is to blame for that, for lagging behind? Is it the coal people themselves, the Federal Government, or the States that have these large deposits of coal that are benefiting by your research.

Where would you place the responsibility?

Mr. HOLLAND. I am not very much of a fellow for pointing the finger for fear I might find myself in the range of it. But I think

probably we can all take a certain amount of responsibility in that regard. I think the industry can, the Federal Government can, and I think if I personally had kicked a little harder for this sort of thing we certainly would have been further along. I do not think we can put our finger on any one particular villain or one fellow who has been negligent. I think it is the feeling that we have all kinds of fuel reserves in this country and do not have to worry.

Mr. CHENOWETH. We went through a depression period in Colorado, and the testimony was you had one here. Apparently you are out of it now. But it is just like the man with his roof: When it is not raining he does not need to fix it, and when it is raining he cannot fix it. In a depression you do not have the money to do research, and when business is good you do not need research.

Mr. HOLLAND. That is a pretty fair statement of the picture.

Mr. CHENOWETH. Is that a comparable situation?

Mr. HOLLAND. I think probably that there has been some lack of realization of just what research can accomplish for us.

I believe that, for example, in the coal industry we are getting a great many more people in it who are trained in the methods of science, and who are trained in what research can do. While in the past those people have not been present, they are there now, and I believe that this recognition of need of a program of this kind is more widespread. I think you are going to get a great deal more demand for it from the industry itself, and perhaps more participation from the industry than it has given in the past.

Mr. CHENOWETH. But we have not been standing still.

Mr. HOLLAND. No.

Mr. CHENOWETH. I have been impressed with the fact we have been making some rapid strides in the research program, from what I have seen in the last couple of days.

Mr. HOLLAND. I think you will find that the coal industry, like any segment of industry in our country, has the desire to advance and use the things it has. We can always point with pride that we have the most efficient coal industry in the world, about five times as efficient as the one next to it. That has not been achieved by neglecting many of the things that we call research.

Mr. CHENOWETH. You think it is a pretty efficient industry?

Mr. HOLLAND. I think it is a very good industry. I think the coal industry has rendered notable service to this country.

Mr. CHENOWETH. I certainly agree with you in that statement.

You feel that we can make greater progress yet through research?

Mr. HOLLAND. That is right. What we have done in the past is just a sample of what we can do in the future.

Mr. CHENOWETH. What is past is prologue; is that it?

Mr. HOLLAND. That is right.

Mr. CHENOWETH. That is all, Mr. Chairman.

Mr. EDMONDSON. Mr. Holland, does your $17 million figure for research on coal in 1955 include the sums spent in this field by the utility companies?

Mr. HOLLAND. Offhand, I cannot give you all the people that were included in that survey. I want to stress the fact I cannot even be sure it includes all the money that has been spent. That was assembled, I believe, by Dr. Rose and Mr. Igeo.

Mr. EDMONDSON. Do you know whether that includes the amount spent by steel companies?

Mr. HOLLAND. I expect it does, especially those amounts spent through BCR and any research projects they might have directly connected with coal.

Mr. EDMONDSON. Does it include, to your knowledge, any of the chemical companies?

Mr. HOLLAND. I cannot tell you. I do not know that. I suspect in some cases it does include that. Not all of it, but some of it.

Mr. EDMONDSON. That has been a rather elusive figure for this committee, the pinning down of just how much money today is being spent on coal research. We are able to get specific figures for a particular industry here and there, but to get a total figure has been a little bit difficult for us.

I did not know whether you had such a figure with that $17 million figure or not.

Mr. HOLLAND. No; I would not want that to be regarded as a total figure. That is simply a figure that has been assembled that the finger can be put on.

Mr. EDMONDSON. Who was the source of that figure?

Mr. HOLLAND. I believe, if you follow back the source, it was published in the American Mining Congress Journal, and I believe that was by Dr. Rose and Mr. Igeo.

Mr. EDMONDSON. Dr. Harold Rose and Mr. Igeo?

Mr. HOLLAND. That is right. They got that by conducting a survey. For example, they sent to us a questionnaire in which we supplied figures on what we had done, what we estimated the actual cost of it would be, and so on.

But I want to call your attention to the fact there are a great many millions of dollars spent in what amounts to coal research that is not in that figure, simply because individual operating companies—for example, our programs in continuous mining, our mechanical mining programs, and a great deal of work in roof control, and so on, has been done at the mines just as a part of the operation. Research, yes, but no real figures on it.

Perhaps if you could get the whole thing, you would find the total sum would be twice that $17 million.

Mr. EDMONDSON. But still only a fraction of what is being spent by the chemical industry and some of the other competing industries in direct research programs?

Mr. HOLLAND. That is right. Of course, some of the money spent there really comes back to coal in the long run.

Mr. EDMONDSON. Yes; I know it does.

Mr. ASPINALL. May I ask 1 or 2 questions?

Mr. EDMONDSON. Yes.

Mr. ASPINALL. Your table of known fuel reserves, measured in terms of tons of bituminous-coal equivalent, is open to some criticism, is it not, in that it does not contain timber or uranium or any of the nuclear-energy ores?

Mr. HOLLAND. In that table I am talking entirely about so-called fossil fuels rather than timber. Of course, atomic energy is still an open question yet in my mind as to just what the final contribution is going to be.

Mr. ASPINALL. May I ask, what is the denominator you use to turn oil shale into bituminous-coal units?

Mr. HOLLAND. I took the figures on the heat units in the estimated reserves of oil shale that would produce more than 15 gallons per ton on the average. The United States Geological Survey has assembled figures of that kind, and I think it adds up to about 6,000 quadrillion B. t. u.'s. I converted to bituminous coal at the rate of 13,000 B. t. u.'s. per pound.

Mr. ASPINALL. That is all.

Mr. EDMONDSON. Mr. Jennings.

Mr. JENNINGS. No questions.

Mr. EDMONDSON. Mr. Soule.

Mr. SOULE. No questions.

Mr. JENNINGS. The next witness is Mr. W. A. Thompson, representing Clinch Valley College which is, I am proud to say, a part of the University of Virginia in this district. He is also engaged in the mining industry, he is also engaged in the hotel business, and the chamber of commerce business.

Mr. EDMONDSON. We are very pleased to have you, Mr. Thompson.

STATEMENT OF W. A. THOMPSON, CHAIRMAN, ADVISORY BOARD OF CLINCH VALLEY COLLEGE OF THE UNIVERSITY OF VIRGINIA

Mr. THOMPSON. Mr. Chairman, I am W. A. Thompson, of Wise, Va., and I appear here as chairman of the advisory board of Clinch Valley College, which is a branch of the University of Virginia.

Clinch Valley College is located in Wise County, right in the very heart of the great bituminous coalfields of Virginia, Kentucky, and Tennessee; in fact, only 30 minutes drive of the Moss mine of Clinchfield Coal Corp., which produces 10,000 tons of coal per day and is one of the world's largest. However, others will furnish you all the statistical information you will need concerning this great coal-producing area and the great need of the industry for research.

We of the college feel there is so much merit in the proposal that our Government establish laboratories for research in coal that it is a foregone conclusion your committee will so recommend and the laboratories will become a reality.

Therefore, my purpose in appearing before you today is simply to offer the full cooperation of Clinch Valley College in establishing such a laboratory in Wise County where the college has ample grounds presently available for the construction of such buildings as the laboratory might need, and located right in the coalfields it would serve, and with a college personnel only too glad to assist in the work of the laboratory in any it could.

I wish to thank you for the privilege of appearing before you.

Mr. EDMONDSON. Thank you.

Mr. THOMPSON. We will be glad to assist you in any way we can.

Mr. EDMONDSON. Thank you, sir.

Are there any questions?

Mr. ASPINALL. No questions.

Mr. CHENOWETH. No questions.

Mr. EDMONDSON. Do you have any questions, Mr. Jennings?

Mr. JENNINGS. I believe not.

Mr. EDMONDSON. Mr. Soule?

Mr. SOULE. No questions.

Mr. EDMONDSON. Call the next witness.

Mr. JENNINGS. The next witness is Mr. C. E. Walker of the Jewell Ridge Coal Co., Tazewell, Va. He is vice president of that company.

STATEMENT OF C. E. WALKER, VICE PRESIDENT, JEWELL RIDGE COAL CO., TAZEWELL, VA.

Mr. WALKER. Mr. Chairman and members of the committee, I am sorry I do not have a prepared statement. I did not know until yesterday I was to be here. I will certainly be glad to make any contribution I can.

Mr. EDMONDSON. You go ahead and shoot from the hip then.

Mr. WALKER. All right, sir.

I certainly think that the coal industry and the country needs additional research in connection with coal. I believe that there is a misconception in the amount of money that is being spent in research.

Every sizable coal company in the country and the steel companies that produce coal and burn coal have their own private research facilities.

As an indication, I would say that Jewell Ridge Coal Corp. runs at least 150 samples per day. That is not considered research in the direct sense as you gentlemen think of it, but we certainly have to have quality, and we have to be sure of that before we ship it to our customers.

In research, in connection with production and roof control and those phases of the operation, this is going on continuously, not only by the coal industry itself but by the representatives of the Bureau of Mines, the State mine inspectors, the State department of mines. It is a continuous research program.

I think the greatest need for research is in connection with the derivatives of coal—of the better usage of coal as a fuel.

I do not think there is any segment of the industry in the United States that has done more toward research in coal burning than the power companies. They are, I think, today getting the highest efficiency from coal that we have ever had in history. I know that is true. In fact, they are getting possibly 1½ times the production of power from a ton of coal that they were able to get just a few years ago.

I do not think I cay say anything further in connection with the matter.

Mr. EDMONDSON. Thank you, Mr. Walker.

Do you have any questions, Mr. Aspinall?

Mr. ASPINALL. No questions.

Mr. EDMONDSON. Mr. Chenoweth.

Mr. CHENOWETH. Tell us something about your company. What size operator are you?

Mr. WALKER. Last year we produced 4 million tons.

Mr. CHENOWETH. How many men do you employ?

Mr. WALKER. About 1,450 men.

Mr. CHENOWETH. How are your operations today compared, say, with 5 or 10 years ago?

Mr. WALKER. Our company has been growing; 10 years ago our company was producing about a million tons a year. Today it is

producing at the rate of 5 million; 19,000 daily, and the number of days we work depends——

Mr. CHENOWETH. How many days are you working?

Mr. WALKER. Now we are working 5 days a week.

Mr. CHENOWETH. Have you been doing that pretty consistently?

Mr. WALKER. We did it consistently all last year.

Mr. CHENOWETH. Do you have any unemployment problems in your area?

Mr. WALKER. Not too great. We operate in three States—a million and a half tons in Virginia, a million and a half in West Virginia, and a million in Kentucky.

Mr. CHENOWETH. What is your market?

Mr. WALKER. Anybody that will buy it. Principally the Middle West and North, quite a bit going export, and a little bit to the South.

Mr. CHENOWETH. What percentage goes export?

Mr. WALKER. I would say, Virginia coal, 20 percent.

Mr. CHENOWETH. About 20 percent?

Mr. WALKER. Yes; and West Virginia about 20 percent. Kentucky none.

Mr. CHENOWETH. You feel rather optimistic about the future of the coal-mining industry in this area. You say you have been growing constantly over the years?

Mr. WALKER. Yes, sir. Well, over the past couple of years; 1954 was a bad one.

Yes, anyone that is in the coal business is an optimist.

Mr. CHENOWETH. He has to be to be in it?

Mr. WALKER. He has to be. It has been a cat and dog industry, and they have never had any long period of time on a high plateau. It has been on the up or down.

Mr. CHENOWETH. It looks like it is getting to that plateau pretty well now.

Mr. WALKER. Well, I hope.

Mr. CHENOWETH. I hope so, too. I hope you stay there.

I was very much surprised to get these glowing reports here today. I had not expected it was going to be that rosy, but I can see you have real grounds for being encouraged and optimistic over the future.

Mr. WALKER. I hope it holds or increases.

Mr. CHENOWETH. I am very happy to be in a coalfield where you have that optimism.

That is all.

Mr. JENNINGS. Mr. Chairman, I would like to make this observation for the witnesses, and especially for the members present:

While the witnesses have given a report of glowing proportions, in all cases the facts do not bear that out. For instance, the Bureau of Labor has just recently made a survey of this district. I will submit this for the record as to the factual information and the exact figures. (See p. 151.) But in this district, we have three classifications which they classify as critical unemployed here. One of them is in the Lee County-Appalachian-Big Stone Gap area. They have roughly over 10 percent of the people unemployed, employable people unemployed.

Another is in the area you have just referred to, the Richlands area, which is considered one of the unemployed areas.

I feel that while you say you perhaps have no unemployment, there is a great deal of unemployment in the area in which you operate.

Compared to the number of people that you employed, shall we say, 3 years ago in 1954 when you were at a low peak, you perhaps have the same number employed now or more than that?

Mr. WALKER. We have.

Mr. JENNINGS. Which indicates a growing trend. But at the same time, you have not been able to absorb the surplus labor that is present in your area; is that not correct?

Mr. WALKER. I do not think we would ever be able to do that, since we are going into mechanization more and more and trying to reduce the number of people.

Mr. JENNINGS. I think that is correct.

I would also like to say that, while we feel in this area we are enjoying better prosperity than we enjoyed 3 years ago, we feel definitely there should be some research into the coal in order to provide more employment for the men in this area.

I was talking with one of the officials in the ODM, a director, and we were discussing coal, and one of the things that has held up the shipment of more coal has been railroad cars. If we could have foreseen this some few years ago and provided for railroad cars, perhaps we would have been even better off and had even more glowing reports today. But as a result of the lack of our foresight, we did not provide for those additional cars and, as a result, we have not been able to take care of all the market, nor have we been able to take care of the employment.

I think the real consensus of the group that have testified today is the fact that now we need research while we are at a high plateau so when this day comes again, as we suffered in 1954, we will have something available to take up the slack.

I just wanted to inject that, Mr. Chairman, because I was afraid that the members of the committee, and especially my colleague, Mr. Chenoweth, were going back to Washington with the idea that we had visited the most prosperous area in the whole United States, and nothing could be further from the truth.

Mr. CHENOWETH. I would like to say to my colleague, I am going to leave here with a very, very favorable impression of this area.

Mr. JENNINGS. Thank you very much. I certainly appreciate that.

Mr. CHENOWETH. If the gentleman will yield, I would like to ask one more question.

You raised the question of cars. I would like to ask the witness, are you getting all the cars you need?

Mr. WALKER. Right now, since the flood?

Mr. CHENOWETH. What is the car situation?

Mr. WALKER. We have had quite a car shortage during the latter part of last year.

Mr. CHENOWETH. Does that happen every year in certain peak seasons?

Mr. WALKER. That is pretty hard to answer, because the coal industry is up and down, and when you do not have any demand for coal, you have plenty of cars.

Mr. CHENOWETH. Let me put it this way:

Has there ever been a time when your company could not work because you did not have cars to load the coal?

Mr. WALKER. Oh, yes.

Mr. CHENOWETH. Has that been frequently?

Mr. WALKER. Quite often.

Mr. CHENOWETH. That is, you have had to shut down, the men are out of work, and you lose the business because you do not have the cars?

Mr. WALKER. That is correct.

Mr. CHENOWETH. What steps do you think should be taken to remedy that situation?

Mr. WALKER. I know of two things that could help the situation. That would be better unloading facilities at tidewater, and more railroad cars.

Mr. CHENOWETH. More what?

Mr. WALKER. More railroad cars. The railroad companies to supply more cars or purchase cars enough to handle the business.

Mr. CHENOWETH. Is the situation improving so far as cars go?

Mr. WALKER. Yes, it is improving. I understand the Norfolk & Western has a building program on, plus the fact they have bought some cars from outside sources.

Mr. CHENOWETH. That is all.

Mr. EDMONDSON. I might say, at that point, that your railroad-car situation apparently was fairly general last year, and I understand in some way it was tied in with the steel strike that took place; that there was a period connected with the steel strike when there was a shortage.

Mr. WALKER. After the steel strike, we had plenty of cars for 2 or 3 weeks, and then we had the same situation again.

Mr. EDMONDSON. One further question. I think we had the estimate up in Pennsylvania that the average age of the miners in the mines was right around 44. Do you know whether that would come pretty close to your average age on miners?

Mr. WALKER. That is a little too high for our company. I would say our average age is someplace around 38.

Mr. EDMONDSON. Thank you, Mr. Walker, for a very fine statement. Off the record.

(Labor Surveys referred to by Mr. Jennings on p. 149 follow:)

[U. S. Department of Labor, Bureau of Employment Security, Office of Program Review and Analysis, Washington, D. C., January 28, 1957]

LABOR MARKET SITUATION IN THE BIG STONE GAP—APPALACHIA, VA., AREA

The Big Stone Gap-Appalachia area is located in the extreme part of Virginia and includes all of Lee and Wise Counties. The area had 92,400 inhabitants in 1950, an increase of less than 1 percent since 1940. Big Stone Gap, in Wise County (population 5,200), is the area's largest population center. Norton, in the same county, follows closely with 4,300. Appalachia (2,900) and Pennington Gap are the only other sizable communities in the area.

In October 1956 (latest data available), civilian labor force in the Big Stone Gap-Appalachia area totaled about 19,700. Agriculture, with some 4,000 workers, provides the largest single source of employment in the area. Nonfarm activity is centered in the coal-mining industry, which, with 3,000 workers, accounts for one-third of the area's nonfarm wage and salary jobs (11,400). Other important sources of employment are trade (2,450), service (1,650), and transportation-communication-public utilities (1,350). Manufacturing employment is relatively small, providing jobs for some 1,050 local workers, primarily in the production of apparel and chemicals.

During the year ending in October 1956, nonfarm employment showed a nominal increase of about 1.3 percent as some 150 additional workers were added to area payrolls. About 100 of the gain was registered in the manufacturing sector. Transportation also rose slightly. Coal-mining work forces remained at the year-ago level, although there was some change in individual mine operations, with expansion in some mines offsetting a shutdown and layoffs in others. A number of mines were reported to be working only 2 or 3 days a week in late October because of a shortage of railroad cars.

The Big Stone Gap-Appalachia area has been listed as a smaller area of substantial labor surplus since September 1953, with cutbacks in bituminous-coal mining primarily responsible for the local unemployment problem. In the year ending October 1956, unemployment decreased by about 950 workers (35 percent). The October 1956 total of 1,800 represented about 9 percent of the local labor force. In addition to the small over-the-year employment gains, outmigration, and withdrawal from the labor force contributed to the reduction in area jobless rolls.

Reports of leading local employers indicate that employment in the Big Stone Gap-Appalachia area would probably continue near the October level through midwinter. Very little additional gain was looked for in manufacturing or coal-mining employment. One coal mine was scheduled to open a new operation in the near future, but this gain may be offset by declines in other mines.

[U. S. Department of Labor, Bureau of Employment Security, Office of Program Review and Analysis, Washington, D. C., January 28, 1957]

Labor Market Situation in the Richlands-Bluefield, Va., Area

The area comprises all of Buchanan, Dickenson, Russell, and Tazewell Counties in southwestern Virginia on the Kentucky and West Virginia borders. In 1950, the population of the area was 133,500, an increase of 10.3 percent since 1940. Richlands (1950 population, 4,650) and Bluefield (4,200) are the only sizable population centers in the area.

Bituminous-coal mining is the area's dominant industry, employing 10,450 workers in November 1956—one-third of Richlands-Bluefield's civilian work force (30,750) and one-half of its nonfarm wage and salary employment (20,250). About 6,000 workers are engaged in agriculture. Manufacturing (1,850 workers) is of comparatively minor economic importance to the area, but is showing favorable signs of expansion. Trade engages 2,500 workers, and service, 1,900.

Nonfarm employment in the Richlands-Bluefield area increased about 5 percent in the year ending November 1956 (1,250 workers), with gains registered in almost all sectors of the local economy. The dominant coal-mining industry, which began to pick up in 1955—after sharp cutbacks in 1952–54 due to weakened demand for coal and increased mechanization of operations—continued its recovery during the past year. Over the year ending in November 1956, coal mining added some 600 workers to its payrolls, making up most of the ground lost since 1952. A large coal-preparation plant, employing several hundred workers, began full operations, and numerous small truck mines opened recently. Construction showed a sharp upturn as work began on a new electric powerplant, several schools, and a new plant to manufacture women's and children's undergarments. Manufacturing added some 100 employees, primarily for the output of communication equipment. Personnel increases in hospitals were responsible for a small rise in services.

The Richlands-Bluefield area has been officially classified as an area of substantial labor surplus since June of 1954. Despite the employment gains over the past year and some outmigration of workers to auto centers in Michigan, unemployment has remained at a relatively substantial level. In November 1956, 1,600 workers were numbered among the unemployed ranks—about 500 (24 percent) less than a year ago. Half of the unemployed persons are former coal miners. Many of these have been hired for some casual work during summer and fall months, but such employment opportunities become relatively scarce as winter approaches. Release of these workers, together with seasonal layoffs in construction and a recent small layoff in manufacturing, raised joblessness in January 1957 to 2,000—slightly over 6 percent of the civilian labor force.

Reports from leading employers in the area indicate that some employment gains are scheduled to early spring. Existing firms plan a few payroll additions, and some new factory-job opportunities are expected to be available in the near future. A new plant for manufacture of children's furniture, nearing completion, has begun to interview applicants, and is scheduled to employ several hundred workers. Long-range employment prospects in both coal mining and manufacturing appear favorable for the area. A new coal mine is scheduled to begin operations about April 1958, and ground has been broken for a plant to manufacture women's and children's undergarments.

(Discussion off the record.)

Mr. EDMONDSON. Back on the record.

Are there any further questions of Mr. Walker?

Thank you, Mr. Walker.

Mr. JENNINGS. Now, Mr. Chairman, I inadvertently overlooked my good friend and one that I can speak of in glowing terms as far as the industry is concerned and as far as my personal relationships, and whom I hold in the highest esteem, Mr. James P. Gills of the Appalachian Electric Power Co. The Appalachian Electric Power Co. is one of the largest users of coal, if not the largest user of coal, in the world, and they are the largest user of coal in my district, having just recently started building a new steam generating plant that is located, for all intents and purposes, just on top of a coal mine.

I might add, they will be the most efficient user of coal in the whole Nation.

We will be glad to hear from you next.

Mr. ASPINALL. Before the gentleman begins his presentation, I would like to say to my colleague, he is not the only one that has that sort of an operation in his district.

Mr. JENNINGS. I will say I have the best.

Mr. EDMONDSON. I had the pleasure of hearing informally from Mr. Gills a little bit as to some of their work in improving the efficiency of coal burning, and I am very glad he is here as a witness.

We will be very happy to have your statement.

STATEMENT OF JAMES B. GILLS, APPALACHIAN ELECTRIC POWER CO., BLUEFIELD, W. VA.

Mr. GILLS. Mr. Chairman, I have with me Mr. Knight Thigpen, who is the procurement agent for the associated companies, which includes the various companies of the American Gas & Electric, which, by the way, did produce more power than any other company in the United States last year, and, I guess, burned more coal, because we are 90 percent coal burners.

We have talked this matter over, and we think we could contribute an awful lot more by preparing a statement which we can give you within a week, because when we came down we were not entirely sure of the direction of this meeting and in what way we could contribute.

Mr. EDMONDSON. We would be very happy to have you give it some further thought and prepare a statement. If you will send it in to Congressman Jennings, I am sure he will take steps to have it placed in the record and made a part of the hearings of this subcommittee.

Mr. GILLS. Of course, we would like to plug our company and our district by saying we are presently adding an entire new plant at Carbo and a large unit at Glen Lyn, Va., both of which are in my

friend's territory or district. This will add 675,000 kilowatts to our capacity, will increase our coal consumption by close to 2 million tons annually, and the 2 plants with the attending stations and lines will cost around $100 million.

Mr. EDMONDSON. I know that is good news, both for the coal industry and for our colleague here from Virginia.

Mr. CHENOWETH. I understand that you are a producer of coal also?

Mr. GILLS. No.

Mr. CHENOWETH. Just a consumer?

Mr. GILLS. We buy coal.

Mr. EDMONDSON. Off the record.

(Discussion off the record.)

Mr. EDMONDSON. Thank you, Mr. Gills.

(Subsequently the Appalachian Electric Power Co. submitted the following statement:)

APPALACHIAN ELECTRIC POWER CO.,
Roanoke 9, Va., February 20, 1957.

Hon. W. PAT JENNINGS,
House of Representatives, Washington, D. C.

DEAR CONGRESSMAN: During the hearing of the Coal Research Subcommittee held at Abingdon last week, you were advised of our intention to file a statement on this important subject. We will greatly appreciate your placing the following in the record.

Appalachian Electric Power Co. provides electric power to 470,000 users in 20 counties of southern West Virginia and 31 counties in southwest Virginia. It is a subsidiary of the American Gas & Electric System, which operates in seven States: Virginia, West Virginia, Kentucky, Tennessee, Ohio, Indiana, and Michigan.

In 1956, the American Gas & Electric System consumed 10,800,000 tons of coal. Of this total, Appalachian used 3,700,000 tons, or approximately 34 percent.

The American Gas & Electric System at the present time has under construction 2,820,000 kilowatts of generating capacity, which, when completed in the next 3 years, will increase the system's total cost use to about 15,500,000 tons. Looking into the future, as far ahead as 1975, we estimate that the American Gas & Electric System will be burning about 30,600,000 tons of coal a year. Appalachian is expected to consume 7 million tons annually by 1965 and 10 million tons a year by 1975.

On the American Gas & Electric System, 96 percent of our generating capacity is based on coal-fired, steam-electric stations, and for a long time to come we do not look for any material change in this picture.

It is recognized that nuclear power is well on its way, but as far as this system is concerned, particularly Appalachian Electric Power Co., nuclear power for generating electricity is, possibly, several decades away. This is due to the fact that our generating plants are so well situated with relation to the eastern coal province of the United States. The cost of fuel represents 70 percent of the cost of generating electricity. Thus, it is readily apparent that we are interested in research to keep the cost of fossil fuel competitive with, not only the nuclear fuel, but also gas or oil.

We believe there exists a great need for further research to improve the efficiencies in the utilization of coal. In this, the electric-utility industry, working with manufacturers of equipment, has made great strides. Two decades ago, as much as 2 pounds of coal were required to produce 1 kilowatt-hour of electricity. Today, in the modern generating plants, this has been brought to less than three-quarters of a pound of coal to produce a kilowatt-hour. This has played a vital part in keeping the cost of electricity down, and also maintaining a competitive position for coal.

We believe more needs to be done in finding new and broader uses for coal. By way of an example, we started in 1935 with experiments in the use of "refuse" or low-grade coal, which before that time was normally discarded to "gob" piles. Through applied research, including changes of boiler designs, we have been able to increase the amount burned of this type fuel until today our plans are using in excess of 100,000 tons of low-grade coal a month from the

mines of Virginia and West Virginia. This is contributing to the conservation of our natural resources as well as to creating a market for coal that formerly was often an operating expense to the coal industry.

More efficient utilization of coal by the electric industry is required in order to hold down the cost of electricity. Low-cost electric power is necessary to attract heavy industries, which, in turn, create new and larger markets for coal. This low-cost electricity is also helping the coal industry to recapture large heating markets it has lost by expanding the use of electricity for heating, or what we call coal by wire. Such improvements in the utilization of coal influences, to a large degree, the predictions that the electric-utility industry will increase its coal requirements from the annual figure of 155 million tons in 1956 to 300 million in the next decade.

Therefore, we heartily subscribe to any program of research that will further increase productivity of the mines, as well as bring about more efficient and broader utilization of coal for all purposes.

Yours very truly,

G. L. FURR,
Vice President and General Manager.

Mr. JENNINGS. At this time we were to hear from Mr. E. J. Cassell. I understand he was present this morning but is not here now.

We will hear then from Mr. Johnson, of Lee County, who is president of the Area Development Corp., and very much interested in an area that has been tremendously affected by the lack of this prosperity we have been hearing about.

STATEMENT OF ARNOLD JOHNSON, PRESIDENT, LEE COUNTY CHAMBER OF COMMERCE, VIRGINIA

Mr. JOHNSON. I am Arnold Johnson, president of Lee County Chamber of Commerce.

We have attempted in some ways to preserve the natural resources we have, and also to develop them a little bit. The natural resources of the area we have in Lee County are the forests, the coal that we are interested in especially, and the young people. And all of it has been going out of our county for a good many years now, and we are very disturbed about it.

We attempted, through several meetings, to see what the reasons were for some of the decrease, and in looking into the coal mines and into the problems that coal miners were having at the present time, we found that most of our large companies were leaving. They were diverting their work through truck mines and to truck mines, which employ maybe 5 or 10 people. Of course, they are numerous, but they do not produce a very large amount.

I believe the report presented by Mr. Criblim for the United Mine Workers indicated that approximately 40 percent of the mines produce less than 50 tons of coal a day, and we have a tremendous amount of small truck mines in our area.

To give you an idea of what happened during this flooded period when the mines were under water, our businessmen in the towns noticed a very definite decrease in business over that period of time. There were not the cars in town, there were not the trucks. People were out of work, and it was a very dead and dull time.

I imagine it can be emphasized in any area where the small truck miner is what they are depending on for income.

Our population decreased in Lee County—because I know that a little more—approximately 11 percent since 1950. The census then

was around 36,000 and it is figured that approximately 11 percent have been moving out. I believe they figure now 6,000 people are going out of the area, outmigration, a year.

The office that Representative Jennings mentioned, Appalachian, which covers Wise and Lee, informs me there are 2,500 miners out of work at the present time, and that is just right now. It has been as high as six and seven thousand unemployed people.

The coal-mining communities are disappearing. In fact, some of the buildings are being sold for fifty or seventy-five dollars, and naturally the situation is a very disheartening one for people who are trying to stay.

The sad part about it is that the man who can get into another industry is the younger man, of course. But, as we have been hearing, the coal miners' average age is quite high, and you do not adjust too well when you are around 50 or 55 to a new type of work. Therefore, the man goes away, tries to get a job, is turned down, and comes back. He just about does anything for his livelihood.

We who are right in it—I believe that Lee and Wise and some of the other areas are spots that are sorely in need of something more in the way of industry. You men are not as concerned about that, I know, except from the research end.

What we did about 2½ years ago is get a lead on the possibility of finding out what could be done with low-temperature carbonization of coal, and to show the interest of our people in the area, the small business men raised $15,000. We formed a corporation. The intent was to see if this thing could develop and if we could make a pilot plant.

The State helped us by VPI checking our coal. I do not remember how many varieties, different seams, from the area we sent up. Tests were run. It was not proven as satisfactory or as hopeful as we had thought. The development was not what we thought it was, and we dropped out of it.

We moved back and saved as much of our money as we could and put it into another project.

We felt here was an opportunity, and many of the people that went into it were coal people, small men who felt here was a chance to find a new use for a product that we have seemingly plenty of but are just burning it up and wasting it.

I think the third thing I would like to mention in connection with this research and what we are interested in doing—of course we all want it where we live. We would like to see the development come to our community and to our place.

I feel it could be kept in mind, if anything such as this is developed, research for new markets, whatever the research is, that it will include perhaps some of these pilot plants, and some of these operations could be centered in the areas where we are having difficulty right now. I know it would help a lot.

I know a pilot plant is not going to employ a lot of people, but it might give a little bit of opportunity to market some of the products we do have here and some of the business we have.

We, of course, are especially interested in our Clinch Valley College because we are next to Wise County and we feel a pilot plant and research facility would be well to develop new uses for coal. When we were working on this, we found there were several hundred possi-

bilities of coal that go up in smoke. I was amazed at what could come out of a little lump of coal.

Just about the time we were working on it, an advertisement was prominent in a national magazine, a little piece of coal and words, "Too precious to burn." That has stuck with me for the years since then.

I realize there is a lot more in that lump of coal than we are getting out of it, and it is a shame we are not using a little bit more of our resources, financial and otherwise, to get out the important things that we have to make the world a better place to live.

I am thinking of the human aspect in these things, perhaps, when I say—going back to the thought of natural resources—so many of our young people are leaving this area. After they get through high school, we do not see them, and we are getting an age group in this area of older people, middle-aged and older, and it is almost impossible to find leaders in our activities in the area. The leaders that are here are overburdened with work. If we could get something that would enthuse our youth, give them a challenge, I know they would come back home and develop a great deal of good things for our Nation out of the natural resources we have here.

Mr. EDMONDSON. Thank you.

Do you have any questions, Mr. Aspinall?

Mr. ASPINALL. I have one question.

Are you thinking in terms of this research program of a project that will last 10 years, 15 years, 25 years, or continuously?

Mr. JOHNSON. I think research continues all the time; does it not? It may need a start. Maybe Government funds would be necessary to get the thing started. Perhaps out of the findings of the research, there will be funds available for further research.

May I explain that we set up in this Virginia Coal & Chemical Corp. the idea of using some profits for research, further research in it.

Mr. ASPINALL. I can understand that, but I am thinking in terms of Federal participation. Have you had any Federal projects in your district that have started and then, because of loss of interest in Congress, have failed of appropriation and have shutdown or attempted to shutdown, and the adverse effect it had upon an area, and the amount of work that was expended to try to keep it in operation and the disastrous effect on the whole community? Have you ever experienced that?

Mr. JOHNSON. No. Are you talking about the project that was out in your State that went in that direction, or out in the West? We were aware of that and discussed that when we were in this project.

Kimber interests, I believe, had a project.

Mr. ASPINALL. No. I am thinking in terms of the Bureau of Mines operation at Rifle, Colo., when they went out on a program to try to find the economic processes of reporting oil shale, and the loss of interest by the Bureau itself, and consequent loss of interest by the Department, and consequent loss of interest by the administration, and consequent loss of interest by Congress. I know what that means.

Mr. JOHNSON. Of course, I recognize that human element, and I am not saying this should be entirely federally supported or State-supported, or in any other way supported. I think it has to be a co-

operative effort. Anything, to succeed, must have the interest of the people at heart.

Mr. ASPINALL. You would not suggest that you would continue indefinitely with Federal participation in a program such as this, would you?

Mr. JOHNSON. No. I would say that we have spent money in projects through the years, that is, the Federal Government, on things that perhaps have to have a crutch a little longer and we continue to help it along. We have done that many times.

I think our question here, or the thought here, is that we get something started that has not been done in too much of an organized way. There have been wonderful strides in the last few years.

I know the BCR Institute—I believe that is the name for it—has been working. I believe the United Mine Workers have been working on research. There have been other programs by the local companies that have been helpful. If I read that correctly, I believe the idea in this is to get some stimulus where there will be something to get it started and to encourage it to keep going.

Mr. ASPINALL. That is all.

Mr. EDMONDSON. Mr. Chenoweth.

Mr. CHENOWETH. Mr. Johnson, I want to commend you on your zeal and your diligence for trying to get something for your community. What is your business?

Mr. JOHNSON. Well, to start out, I am a preacher, and right now I am in the flower business, and have been working with the chamber of commerce in my spare time. I think there is a lot of opportunity and a lot of possibility in our area, possibilities that are undeveloped, and I think a lot of it might be because of a lack of leadership.

Mr. CHENOWETH. The situation you described in Lee County is not a situation peculiar at all to Lee County?

Mr. JOHNSON. No.

Mr. CHENOWETH. It reminds me of some of my counties in my district where I have the same problems.

Are you blaming the situation in Lee County entirely on the coal industry and failure to have a research program in coal? You would not want the committee to get that impression, would you?

Mr. JOHNSON. I will say this: I think that the folks in Lee County probably thought that the coal economy would always be high and depended too much on it.

Mr. CHENOWETH. Are you not producing more coal there today than ever before?

Mr. JOHNSON. I do not have any specific figures on that. I will be frank with you.

Mr. CHENOWETH. That is the impression I have received today from all the witnesses.

Mr. JOHNSON. We do not—well, we have a lot of mines, but we do not have the production because our big mines are through. Economy of operation, for one thing. The Blue Diamond Coal Co. has had to move out because it is not feasible to mechanize their mines, and it is too costly to get that coal mined by the miner. It has been necessary for them to discontinue their operation there and move somewhere else where it is a little easier to get to it.

Mr. CHENOWETH. Do you have more mines or fewer mines today than you did before?

Mr. JOHNSON. Perhaps more mines, but fewer people employed in the mines. That is, say, a little coal company employs 5 people, where Blue Diamond employed 3,000 people at one time. It takes a lot of 5- and 10-employee mines to make up for a large mine that is no longer operating.

Mr. ASPINALL. Will the gentleman yield?

Mr. CHENOWETH. Yes.

Mr. ASPINALL. Off the record.

(Discussion off the record.)

Mr. EDMONDSON. Back on the record.

Mr. CHENOWETH. I think that is all.

Mr. EDMONDSON. Are there any further questions?

Mr. JOHNSON. I appreciate the opportunity. I am not a coal miner, but I am interested, as I said, in the natural resources we have in this area and would like to see our young people have an opportunity in even research. There are some who are interested in it.

Mr. EDMONDSON. We appreciate your spirit in coming up to state your views to the committee, Mr. Johnson, very much.

Call the next witness, Mr. Jennings.

Mr. JENNINGS. The next witness is Mr. Bruce Perry, appearing for the Coeburn Mining Co. of Coeburn, Va.

STATEMENT OF BRUCE PERRY, COEBURN MINING CO., COEBURN, VA.

Mr. PERRY. Mr. Chairman, I am sorry I have not prepared a statement beforehand, but I would like to answer any questions after I make a few remarks.

We in Wise County are eager to participate in a program in coal research. Fifty percent, I would say, approximately, of the people there are employed in truck mines. We are not organized within a group like some of the other larger organizations. Therefore, our contribution would come through, we think, the Federal Government, the State government, and probably the county, because we pay taxes and we feel as though we are contributing in that manner.

Unemployment is a problem, especially in our area. It might be said even more than in some of these other gentlemen's areas, because we have mined out certain areas. What we need is some type of industry that is diversified but still allied with the coal industry, and this could probably be found through research.

Thank you.

Mr. EDMONDSON. Mr. Aspinall, do you have any questions?

Mr. ASPINALL. No questions.

Mr. EDMONDSON. Mr. Chenoweth.

Mr. CHENOWETH. Tell us something about your company. How large an operator are you?

Mr. PERRY. At the present time I guess I employ about 35 men. I operate more than one truck mine. I have operated several.

Mr. CHENOWETH. How long have you been in the coal business?

Mr. PERRY. Since World War II. I was a flyer in World War II, and since my discharge from the service in 1945 I have been in the coal business.

Mr. CHENOWETH. You had not been in the coal business previous to that?

Mr. PERRY. No, sir.
Mr. CHENOWETH. Was any member of your family?
Mr. PERRY. Yes; my father.
Mr. CHENOWETH. He had been in the coal business?
Mr. PERRY. Yes.
Mr. CHENOWETH. Do you and your father engage in business together now?
Mr. PERRY. No, sir.
Mr. CHENOWETH. You started this on your own?
Mr. PERRY. Yes, sir.
Mr. CHENOWETH. What attracted you to the coal business?
Mr. PERRY. Sir, we only have one industry at home and that is coal.
Mr. CHENOWETH. Your whole economy is——
Mr. PERRY. Based entirely on coal; yes, sir.
Mr. CHENOWETH. What is the production of your county as compared to 5 or 10 years ago?
Mr. PERRY. Our production is up slightly.
Mr. CHENOWETH. It is up?
Mr. PERRY. Yes, sir. But I might clarify that statement. Although production is up, unemployment is up also, due to mechanization.
Mr. CHENOWETH. You are going more to the smaller truck mines mostly for your production?
Mr. PERRY. Yes; we are going largely, in our particular county, to the small truck mines because we are able to recover a lot of the rim coal that the large mines cannot.
Mr. CHENOWETH. What is the largest operator in your county? Who is your largest company?
Mr. PERRY. I just do not know. I guess the Stonega Co. I think Mr. Tigert represents that company.
Mr. CHENOWETH. Do you have some large operators who employ 500 or a thousand men, something like that?
Mr. PERRY. I would say Stonega does. I would not be sure of that.
Mr. CHENOWETH. Most of your operators are small, like yourself?
Mr. PERRY. Yes, sir; most of us employ in each particular mine about 10 or 15 miners.
Mr. CHENOWETH. How many coal miners in the county, would you say?
Mr. PERRY. I do not know.
Mr. CHENOWETH. How many are unemployed?
Mr. PERRY. I do not have the exact figures.
Mr. CHENOWETH. Are your unemployment conditions growing worse?
Mr. PERRY. Yes. I also serve in the official capacity as mayor of our town and the relief line seems to grow longer. The exact figures could be prepared.
Mr. CHENOWETH. Of people that are out of work in the coal mines and unable to find work elsewhere?
Mr. PERRY. Yes, sir.
Mr. CHENOWETH. There is no other industry there?
Mr. PERRY. Unless it is allied with the coal mines.
Mr. CHENOWETH. It is a typical coalfield?
Mr. PERRY. Very much so.

Mr. CHENOWETH. If a man loses his work in the mine, there is nothing else to do?

Mr. PERRY. Yes, sir.

Mr. CHENOWETH. They own their own homes, do they?

Mr. PERRY. Most people own their own homes in our county. Our schools, incidentally, have become much better. We have a tremendous building program throughout the county, and that has attracted people to remain there and educate the children. But, as a rule, we are losing the great majority of our children after they graduate from high school and go to college. This is of great cost and expense to the county itself.

Mr. CHENOWETH. What would you say would be the solution to the problem in your county? What can be done?

Mr. PERRY. We need allied and diversified interests pertaining to coal through research. I feel as though we could bring other industry in, or an industry that could be closely allied with the coal industry, using our resources, therefore giving employment to many people.

Mr. CHENOWETH. That is the same thing we have been interested in in Colorado for a long time. We have not been able to find it as yet. It is very difficult to do that.

Mr. PERRY. Research alone may not be enough. I am under the impression this committee will also try to find new markets, that would be in the form of research, I daresay, whether it would be through chemistry that they use coal in a different way, finding a new market.

Mr. CHENOWETH. You heard it mentioned today here that something like $17 million a year was now being spent for research work in coal, and that it probably was much greater than that, counting companies that did not make a report. So you see, considerable work is being done in that field now. It is not unexplored, not a virgin territory at all. A lot of work is being done right now.

Mr. PERRY. At the same time, I think we all feel it is a very staggering job that confronts us, and out of this $17 million spent, I wonder how much is being spent twice on the same problem.

Mr. CHENOWETH. I have no idea about that.

Mr. PERRY. It is of big concern to us that we have something.

Mr. CHENOWETH. It is obvious that the companies who are engaged in the production of coal are going to do everything they can to increase that production and increase their profits so they will stay in business over the years. I think they are doing that, and they are contributing to this one research group, and colleges are doing a lot of work along that line for private companies.

I think a lot of research work is being done. I would not want the impression to be created there is no research work being done in coal. Just in the last 2 days, since I have been sitting at these hearings, I have formed a very definite impression this coal-research program has been going a long time.

Mr. PERRY. I am very aware of that. I know we have several hundred items now produced from coal, and that this has been developed through the years.

Mr. CHENOWETH. I am not saying there is not a great deal more that can be done, but we are not starting from scratch in this field.

I think that is all.

Mr. EDMONDSON. Mr. Perry, how much of a factor is the freight situation in your area in your problem of attracting consumers for coal in your own neighborhood there?

Mr. PERRY. I might say that we are in a fortunate position in this matter, due to the opening of a new TVA steam plant at Rogersville. A lot of our coal has gone to them. I do not believe it has been mentioned, a very low freight was given by the Interstate Railroad. I think it has been mentioned that we have more than one railroad in the county, but in my particular area of mining we can use the Interstate, and therefore, we have been able to sell quite a bit of coal to the TVA, which has taken up the slump more or less in the market there.

In other words, some of our better fuels are still being exported and going to the Great Lakes and the eastern seaboard.

Mr. EDMONDSON. In attracting manufacturing industries or chemical industries, steel and coal users of that type, have you found that your freight situation was any real deterrent to bringing them in?

Mr. PERRY. Yes, very much so, and also our highway system. Due to the rugged terrain, which you will find in most coal sections, we do have a high freight rate. Unless there could be some compromise worked out in bringing back these empty gondolas loaded with raw material to be processed and sent out again.

Mr. EDMONDSON. We had the figures presented to us earlier, I think, that the average working year in the truck mines was around 127 days. Would that hold for your operation—that the average worker could expect to work about 127 days out of the year?

Mr. PERRY. I have an odd combination in my operations. I operate more than one seam of coal. I have one seam mined primarily for domestic use. That number would be a little smaller. And I mine a very high grade seam of coal in another, and we work every working day of the year that is permissible, barring weather, and, of course, without Saturdays and Sundays.

Mr. EDMONDSON. So you think that 127 days a year figure would probably relate more to mines producing this domestic coal than it would to the metallurgic coal producers?

Mr. PERRY. Yes.

Mr. EDMONDSON. How does the wage rate of the miner in your truck mines compare with the wage rates in the shaft mines?

Mr. PERRY. Considerably less. The biggest factor is that we have to pay approximately 25 percent of our retail price of coal at the coal dock for haulage alone. By that I mean from our tipple to a railhead.

If you people are not familiar with what a dock is, by a dock we mean a siding on a railroad track. They have cars, and all this coal is purchased through a broker or a man that owns a siding and processed. About all that we do in our section mostly is grind the coal, bring it down to 2 inches. About one-fourth of the sale of that coal is used for haulage.

Mr. EDMONDSON. Is there any cooperative mining of the coal by the truck miners?

Mr. PERRY. No.

Mr. EDMONDSON. Is there any cooperative marketing of the coal?

Mr. PERRY. No, there is not. There is definitely a shortage of rail sidings, and, unfortunately for the rail people, land is not available where more sidings could be put in. A dock is a very valuable asset to anyone that could be in the mining business. As a rule, most of the

docks are not owned by the coal operators but owned by brokers or middlemen.

Mr. EDMONDSON. Have you folks in the truck-mining industry suffered just as much, to your knowledge, from this rail-car shortage as the other coal operators here testified to?

Mr. PERRY. I would say even more, because with the large mines, they have always had a standing order, and the smaller docks, we take what is left. We are assigned no cars.

I have been in Mr. Wingo's office in Bluefield in discussion with him, and I heard him mention that so many cars are assigned to a certain mine. We are not assigned any number of cars whatsoever. If there is a surplus or, as a rule, there are some cars that are undesignated, we do get those cars. In the rail shortage, or car shortage, we suffered more than the larger man.

Mr. EDMONDSON. Could you say that any particular number of days last year your production was shut down because of the lack of cars?

Mr. PERRY. Yes; I was down several days last year due to the shortage of cars.

Mr. EDMONDSON. Would it be less than 10 days for that reason?

Mr. PERRY. More than 10. I would say at least as many as 15, and at times we only ran at half production, which is not profitable because in our mines we have key personnel who must be paid for full production as well as half production. Therefore, it was more costly for us when we only worked half days.

Mr. EDMONDSON. Then if this car shortage problem could be licked, it would be of material benefit to your operations?

Mr. PERRY. It most certainly would.

Mr. EDMONDSON. Do you have any questions, Mr. Jennings?

Mr. JENNINGS. I do not believe so.

Mr. EDMONDSON. Mr. Soule.

Mr. SOULE. No.

Mr. CHENOWETH. May I ask another question?

Mr. EDMONDSON. Surely.

Mr. CHENOWETH. Who owns the coal land in this area for the most part?

Mr. PERRY. I am very glad you asked that question, sir.

The majority of the coal would be owned by the Virginia, Iron, Coal & Coke Co. The Virginia Coal & Iron Co. and Clinchfield Coal Corp. are the major holders, but there is a tremendous amount of private coal in that area. But it has been mined out mostly. So it is held by large land companies.

Mr. CHENOWETH. Large land companies?

Mr. PERRY. Yes, sir.

Mr. CHENOWETH. Who owns the land where you mine your coal? Did you buy the lands?

Mr. PERRY. I own the surface right and the Virginia Iron, Coal & Coke Co. owns the mineral rights, and I pay them a royalty on one tract. On another tract of mine, I pay a royalty to Gladeville Coal Co. and they own the land.

Another tract of land is owned by a coal corporation in Cincinnati.

Mr. CHENOWETH. Are not these sites for truck mines rather limited? Suppose I wanted to go in and open a truck mine. How would I go about it?

Mr. PERRY. You would contact one of the major companies, the major company being in operation there, and in the truck-mining business now is probably the Virginia Iron, Coal & Coke Co. or the Gladeville Coal Co.

Mr. CHENOWETH. And they would assign a certain site to me?

Mr. PERRY. Yes, sir.

Mr. CHENOWETH. That is the way it is done?

Mr. PERRY. Yes, sir.

Mr. CHENOWETH. It is on a royalty basis?

Mr. PERRY. Yes, sir.

Mr. CHENOWETH. Do you sign a lease or a contract for 5 years or 10 years?

Mr. PERRY. Leases are drawn differently by different companies.

Mr. CHENOWETH. What is the average length of the lease? Is it a short-time lease?

Mr. PERRY. Yes, sir; 30 days.

Mr. CHENOWETH. Thirty days?

Mr. PERRY. With the Virginia Iron, Coal & Coke Co. With other companies I operate with, I get 5-year leases.

Mr. CHENOWETH. Why the 30 days? What is the reason for only a 30-day lease?

Mr. PERRY. Sir, I don't know.

Mr. CHENOWETH. Do you mean you do not know in the next 30 days whether you are going to be in business or not?

Mr. PERRY. That depends on the terms under which the lease is drawn. There is more or less a working agreement that we will have longer to work the coal out. I have worked several leases out on 30-day agreement terms.

Mr. CHENOWETH. You would exhaust the coal in 30 days?

Mr. PERRY. No, no. The agreement is drawn that it might be canceled in 30 days.

Mr. CHENOWETH. I see.

Mr. PERRY. But as a rule, I have never known in the past 5 or 6 years a lease being canceled.

Mr. CHENOWETH. Is this leasing arrangement pretty satisfactory with everyone?

Mr. PERRY. Very much so, I think.

Mr. CHENOWETH. I think that is all, Mr. Chairman.

Mr. EDMONDSON. Thank you, Mr. Perry.

Mr. PERRY. Thank you.

Mr. EDMONDSON. We will take a short recess.

(A short recess was taken.)

Mr. EDMONDSON. The committee will come to order. We will have the next witness called.

Mr. JENNINGS. At this time we will hear Mr. Paul Brown, representing the Swords Creek Mining Corp. of Honaker, Va., a personal friend of mine.

We are glad to have you with us.

Mr. EDMONDSON. You may proceed, Mr. Brown.

STATEMENT OF P. F. BROWN, SWORDS CREEK MINING CO., HONAKER, VA.

Mr. BROWN. Mr. Chairman and gentlemen, I am P. F. Brown, and I represent Mr. R. O. Vandyke. I have no prepared statement because I received a telephone call and was asked to come over here. Mr. Vandyke is the president of Swords Creek Mining Corp., Vincamp Coal Corp., and New Garden Coal Corp., which are small operations running from 100,000 to 300,000 tons a year.

In the past some of those mines had a very lucrative market for prepared-size coal, but that market has diminished and almost vanished. We feel that some kind of a research program that would find some other utilization of coal for mines of that size would be very helpful indeed.

In ordinary times, mines of this size do not appeal too much to the large industrial consumer for the reason that their production does not anywhere near reach their consumption, and he would have to have several sources of supply to keep going.

We feel that some kind of a research program would be very beneficial. It is our feeling that the Government should participate in this, and I feel that they should do that on a continuous basis, largely for this reason:

The coal industry pays their taxes on a continuous basis.

Thank you, sir.

Mr. EDMONDSON. Are there any questions?

Mr. ASPINALL. No questions.

Mr. EDMONDSON. Mr. Chenoweth, do you have any questions?

Mr. CHENOWETH. Just this: You recognize, do you not, Mr. Brown, that we have a research program now for coal?

Mr. BROWN. Yes, sir.

Mr. CHENOWETH. How much further do you want us to go in this? Is it a question of spending more money? Or what are your suggestions for the research program?

Mr. BROWN. I think the research program should be broadened, and to do that would require the expenditure of additional funds.

Mr. CHENOWETH. Who should put up that money?

Mr. BROWN. I think the Government should participate in it.

Mr. CHENOWETH. The Government is putting up about $5 million a year now, are they not, through the Bureau of Mines, for research work in coal? That is the impression I have.

Mr. BROWN. Yes, sir.

Mr. CHENOWETH. Should they put up more than $5 million?

Mr. BROWN. Yes, sir; I think so.

Mr. CHENOWETH. How much more should they put up? I am curious to get your thinking on this, because I do not want the impression to be left here there is no research being done in coal. I think there is a vast amount of work being done now.

Mr. BROWN. I think you are exactly right. BCR is doing good work.

Mr. CHENOWETH. And in colleges and universities, private companies and utilities. They are all doing that research.

Mr. BROWN. Yes, sir.

Mr. CHENOWETH. Do you not think we are going to make a mistake if we just assume we are going to spend another 5 or 10 million and

cure all of the ills of the coal industry or solve all of our problems? Because I do not think we are going to do that.

Mr. BROWN. I do not think we are going to do that either, but I think we will help to solve them by doing that and——

Mr. CHENOWETH. I want to do all we can do.

Mr. BROWN. That gesture on the part of the Government would be an encouragement on the part of the coal operator to do more also. He would feel like the Government is cooperating with him, and to that extent, with both their efforts—and I think the States should participate also—the three of them together should be able to do a good research program that in future years would find markets for the coal to take the place of the markets that it has lost to competitive fuels, such as gas and oil, and so forth.

Mr. CHENOWETH. We want to increase production of coal, and to do that we will have to find new ways to use coal; will we not?

Mr. BROWN. Yes.

Mr. CHENOWETH. That is the reason this committee was set up, to see what we could recommend in the way of a research program that might do that.

Mr. BROWN. Yes ,sir.

Mr. CHENOWETH. And see what we can do to help the coal industry. In our particular area, it has been a sick industry. Here I would say the patient is improving rather rapidly, but we have many problems ahead of us.

Mr. BROWN. Yes, sir

Mr. JENNINGS. I wonder if I might make an observation. A great deal has been said about the $17 million that is being spent for coal research.

In the hearings of this committee last spring, it was pointed out that while $17 million was spent for coal research, $20 million was spent for transportation, $28 million for textiles, $54 million for rubber, $146 million for petroleum, and $319 million for machinery, and $361 million for the chemical industry.

Now I think it might be fair also that we point out that oil gets a depletion of 27½ percent while coal only gets a depletion allownce of 10 percent. And in this $17 million that is expended for coal research, some of that is by the manufacturers to find new methods of mining and new machines for the production of coal.

The point I would like to make—and I think there is no disagreement on my colleague's part—that this is a very small amount to the total industry.

Mr. CHENOWETH. Will the gentleman yield?

Mr. JENNINGS. Yes.

Mr. CHENOWETH. The amounts that you have mentioned there are set by the industries themselves.

Mr. JENNINGS. Government and industry.

Mr. CHENOWETH. What you say now, is it critical of the coal industry because they have not spent more?

Mr. JENNINGS. I think perhaps it could be construed that some of it is critical of the coal industry because they have not spent more; yes. I do not feel that they are entirely blameless, but I think that maybe we need to stimulate their expenditures by adding a little more from the Federal Government.

Let me also point this out: That, in my opinion, the conservation of these natural resources is a function of the Government, and the coal industry itself is interested in mining for the purpose of making money presently and not conserving resources for 200 years, and that is the function of the Government.

Mr. CHENOWETH. In order for the coal industry to participate in this utopia which we think is coming for the coal industry, they are going to have to stay in business now.

Mr. JENNINGS. That is right.

Mr. CHENOWETH. And they are going to have to make a profit to stay in business.

Mr. JENNINGS. That is right.

Mr. EDMONDSON. When the gentleman from Virginia speaks of conservation, of course, if it is possible for the Government to devise a way of getting twice as much benefit from one lump of coal as is now derived from that lump of coal, why, we will invest and have real and substantial conservation.

Mr. JENNINGS. In conserving those things which we are not now using in the form of byproducts at all. Perhaps some of the best ingredients of coal are now going up in smoke or being thrown away in ashes.

Mr. EDMONDSON. Do you have any questions of Mr. Brown?

Mr. JENNINGS. No questions.

Mr. EDMONDSON. Thank you for your contribution.

Mr. BROWN. Thank you.

Mr. JENNINGS. At this time we will hear from Mr. Herman Huff. Mr. Huff is the executive secretary of the Norton Chamber of Commerce, which is located in Wise County.

Mr. EDMONDSON. We are happy to have you with us.

STATEMENT OF HERMAN HUFF, EXECUTIVE SECRETARY OF THE NORTON AREA CHAMBER OF COMMERCE, NORTON, VA.

Mr. HUFF. Thank you, sir.

I am Herman Huff, executive secretary of the Norton Area Chamber of Commerce, which embraces four towns in Wise County, Mr. Jennings.

Mr. JENNINGS. Thank you for the correction.

Mr. HUFF. There is not much necessity of my going into the economy of our area. I am sure the economy of our area is very similar to that of other coal-producing areas. But coal is one of our most valuable natural resources, and it is very vital to our national defense as well as to our long-range national economy.

Long-range conservation and our defense effort certainly warrant the Federal Government spending more funds on research in all fields, not just the laboratory, as we are thinking of new products, but such things as marketing, safety, and many other things that could be included in the field.

I want to get into the record that we think research is more than just chemical development.

The establishment of these research centers could very well be in the coal-producing areas, not only of Virginia but the other States and areas involved.

Naturally, we recommend the establishment of a research center at Clinch Valley College, which would add to the economy of establishing such a center and also help the college develop its program.

In order to preserve the economy of the coal-producing areas, we feel that every effort should be made to encourage the industry, created by new products from this research, to locate in these coal-producing areas. This should help do away with the vacuum created by mechanization in coal mines.

The history of our coalfield here in Virginia and Kentucky has been a series of ups and downs, and we believe research could level out the situation considerably.

We think this research should be a coordinated research so that the left hand knows what the right is doing, and that the Federal Government is justified on the basis of long-range conservation—basically twice as much usage from each lump of coal, and so forth.

We also feel that positive research should take two forms: The immediate research to help in our immediate problems, and the long-range view to conserve our coal if we intend to remain a nation for hundreds of years. Two hundred years is not very long in the history of a nation.

The export coal market is a very dangerous market, although it takes care of a large percentage of our coal now. But in the recent Suez crisis, I know from 1 or 2 operators that I talked to, they had quite a problem shipping coal out because of the cars tied up at docks; because of shipping having to go a longer route, more boats were tied up between the consumer and the producer. So it is a very dangerous one for us and can affect us overnight.

That is all I have, gentlemen.

Thank you very much.

Mr. EDMONDSON. Mr. Chenoweth, do you have any questions?

Mr. CHENOWETH. You say you represent four towns?

Mr. HUFF. Yes, sir.

Mr. CHENOWETH. Is coal their principal economy?

Mr. HUFF. Yes, sir.

Mr. CHENOWETH. Is it the whole economy?

Mr. HUFF. About 99 percent; yes, sir.

Mr. CHENOWETH. There is no agriculture?

Mr. HUFF. Very little, sir.

Mr. CHENOWETH. Do you have some unemployment problems there?

Mr. HUFF. Yes, sir; we do.

Mr. CHENOWETH. But production of coal in those four counties, I presume, is on the increase.

Mr. HUFF. Four towns, not counties, sir.

Mr. CHENOWETH. In that area, I mean.

Mr. HUFF. Coal production is up; yes, sir.

Mr. CHENOWETH. It is going up.

Mr. HUFF. But it has been down.

Mr. CHENOWETH. But the last 2 years it has been up considerably?

Mr. HUFF. Yes, sir.

Mr. CHENOWETH. That has not solved your unemployment problem then?

Mr. HUFF. No, sir; it has not.

Mr. CHENOWETH. Is your unemployment problem getting worse?

Mr. HUFF. It seems to be stabilized right now. I do not have the exact figures.

Mr. CHENOWETH. Are any of these men being called back at all to the coal mines?

Mr. HUFF. Some of them are, sir, but many of them are going out to other industrial areas, Ohio, Illinois, Indiana, Michigan.

Mr. CHENOWETH. You are suffering a loss of population then?

Mr. HUFF. Yes, sir; the young people.

Mr. CHENOWETH. I think that is true in every coal county.

Mr. HUFF. It probably is.

Mr. CHENOWETH. It is not peculiar to your area at all. I think that is true in all areas. I know it is true in my area.

I think that is all.

Mr. EDMONDSON. What are the four towns in your area?

Mr. HUFF. Coeburn, Wyatt, Pound, and the city of Norton. We are interested, of course, in all of Wise County and southwest Virginia.

Mr. EDMONDSON. Any questions, Mr. Jennings?

Mr. JENNINGS. No.

Mr. EDMONDSON. Mr. Soule.

Mr. SOULE. No questions.

Mr. EDMONDSON. Thank you very much, Mr. Huff. We appreciate your testimony.

Mr. JENNINGS. Mr. Chairman, at this time I would like to have permission to file for the record a letter from Mr. Humphrey, president of the Stonega Coke & Coal Co., and also a letter from Mr. Meador, vice president of that same company, who was present today and requested it be filed.

Mr. EDMONDSON. If there is no objection, both letters will be made a part of the record at this point.

Hearing no objection, it is so ordered.

(The letters follow:)

STONEGA COKE & COAL CO., INC.,
Philadelphia, Pa., February 12, 1957.

Hon. W. PAT JENNINGS,
House of Representatives, Washington, D. C.

DEAR SIR: Thank you very much for the opportunity to express myself at the hearing before the Special Coal Research Subcommittee at Abingdon on Friday, the 15th.

In the interests of saving time, as you suggest, I am submitting my thoughts in writing. You have, no doubt, received for your consideration the statement of Harry LaViers, chairman of the committee on research and development, National Coal Association, before the Subcommitee on Coal Research, Monday, June 4, 1956, and also a résumé of the coal-research program. I am whole-heartedly in accord.

This program will not only help everyone directly or indirectly interested in the coal industry but the coal user as well. As a director of Bituminous Coal Research, Inc., I am familiar with the tremendous need for this broad approach, an approach that will have such a widespread helpful effect. It will protect the coal reserves and help the miners, the operators, the railroads, and the coal consumer to make a more effective use of this valuable fuel.

With the feeling that the above-mentioned statements by Harry LaViers and the résumé of the research program cover the situation completely, I will close with the earnest wish that the subcommittee will see fit to make a proper recommendation for formal legislative action.

Respectfully submitted.

E. P. HUMPHREY, *President.*

STONEGA COKE & COAL CO., INC.,
Big Stone Gap, Va., February 14, 1957.

Hon. W. PAT JENNINGS,
House of Representatives, Washington, D. C.

DEAR SIR: I appreciate and thank you for your letter to me of February 9 advising that the Special Coal Research Subcommittee would hold a hearing in Abingdon, Va., on Friday, February 15.

Since you advised that this would be a 1-day hearing, and would probably not be able to take testimony from everyone present, you stated it would be in line to submit a written statement.

In my letter to you of June 11, 1956, I referred you to a statement made before the Subcommittee on Coal Research by Mr. Harry LaViers on Monday, June 4, and it is my understanding you secured a copy of his paper; also in my letter to you I stated that our company was in complete accord with Mr. LaViers' presentation.

The résumé of the coal-research program prepared by the National Coal Association in Washington states that a recent study by the United States Bureau of Mines, cooperating with representatives of the coal industry, developed a list of 209 research possibilities, and that a list of these possibilities is contained in Bureau of Mines Circular No. 7754.

I do not feel that there is anything I can add to Mr. LaViers' report, or to the résumé of the research program mentioned. Our president, Mr. E. P. Humphrey, Philadelphia, wrote you on February 12, advising that he would be unable to attend the Abingdon hearing, but outlined our company's position in connection with the coal research program.

Very truly yours,

H. W. MEADOR, *Vice President.*

Mr. JENNINGS. I only have one more witness, and I am very reluctant to call him a witness because I might refer to him in the category of a philosopher.

First, are there others here that would like to testify? Have I omitted anyone?

Mr. RIGG. I would like to make a brief statement if I might.

Mr. JENNINGS. We will be pleased to have you. Give the reporter your name.

STATEMENT OF KENT RIGG, KENNEDY'S PIGGLY WIGGLY STORES, NORTON, VA.

Mr. RIGG. Thank you so much.

My name is Kent Rigg. I represent the Kennedy's Piggly Wiggly Stores, with central office in Norton and stores in outlying towns, six retail stores and wholesale outlet.

In addition, I represent several small truck mines. I am an employee of these coal companies and of the Piggly Wiggly Stores.

I would like, first of all, to say that insofar as our grocery business is concerned, of course, it is not news to you that it is vastly dependent upon the coal industry.

The crux of the whole situation, as I see it, is this:

What we need is a stable coal economy, and I think that a stable coal economy can be brought about by research so that we will not have to depend for our stable economy upon foreign markets which may be sealed off at any time.

As to the labor situation, I would say that really the problem does not manifest itself too well because, as others have pointed out, our surplus labor leaves, our young people go off and get educated, come back, and then leave.

But, in addition to the fact that many of these people have left, we do have a labor problem, and as a representative of a grocery concern,

I see every day the people down getting surplus Government foods in Norton and in Dickenson County. That manifests it, I think, very well.

In addition, we have coming to our small mines every day miners wanting work. Apparently they must be out of work.

We ran an ad recently anonymously in the Norton newspaper, the Coal Field Progress, asking for experienced mine operators with equipment and with know-how. We asked that the replies be made in letter form, which, of course, always gets less response than telephone calls might. We got 13 replies from men who know the mining business and who were looking for work.

Mr. EDMONDSON. What equipment were you requiring the miners to have?

Mr. RIGG. We did not make any specific request for equipment, just generally mine equipment. In the small truck mines we do not use Joy leaders and things like that, but possibly cutting machines, ponies for pony mining cars, drills, and things like that.

I think that this also shows there are people in our community who would mine coal if they had the chance.

There is one more point I would like to make, and that is this: That I think more people would go into the coal-mining business today if it were a stable business. People are afraid to risk their money on something that might be good for 2 years and then, boom, it is gone.

Some of our wealthiest citizens today were wealthy before, and in the meantime they were broke, and they started at the bottom and they came up again. We have got to level this off. And in order to level it off, we cannot depend on foreign markets to sell our coal. They may be cut off and they may get their mines back in operation, and they may find other means of generating their power and running their industries.

That is all I have to say.

Mr. EDMONDSON. Thank you.

Mr. RIGG. I would like to say that I am not an expert in the field of coal. I am recently out of school, and I preface my remarks at this time upon my short experience. But I am vitally interested in, and I have done some work and some research in, the matter.

If there are any questions, I will be glad to try to answer them.

Mr. EDMONDSON. Thank you for a very fine statement.

Do you have any questions, Mr. Aspinall?

Mr. ASPINALL. I came in late, but, as I understand your approach and your suggestions, what you suggest to the coal industry would also apply to the tungsten industry, the manganese industry, the lead and zinc industry, the copper industry, more than likely to the farming industry. All of these industries, which are basic to our whole economy, upon which all of the rest of our economy depends, that is, the things that are taken from the soil—all need something of the same sort of a solution in order to keep away from this boom and bust program of the last, let's say, century or two.

Mr. RIGG. Certainly insofar as farms are concerned, the Government has taken action there to stabilize or attempt to stabilize their economy, and I would say——

Mr. ASPINALL. You would not suggest that we have found any solution; would you?

Mr. RIGG. No, sir; I would not. I certainly would not. I would also say this respectfully: That I think we should start with the most important first.

Mr. ASPINALL. And to you that is coal?

Mr. RIGG. Not necessarily coal first. I would say coal and oil and, as you pointed out, farms. I think they are three of the real problems.

Coal is one of the most vital resources, and has been for a number of years.

I would also point out that on one particular piece of property which we were able to buy recently, I would say we have estimated there were over a million tons of coal that have been sealed off by improper mining methods, by people that went in and hogged out the close coal and then pulled out.

Mr. ASPINALL. That applies to all mineral mining, of course.

Mr. RIGG. Yes, sir.

Mr. ASPINALL. More so to hard-rock mining, perhaps, than it does to coal.

Mr. RIGG. Yes, sir. But our supply certainly is not—well, it is a fugitive resource. You do not know how much there is. But we do knew we do not have enough to last indefinitely. Along with the research for possible new markets for coal, there might be some possible control of mining methods which could stem therefrom.

Mr. ASPINALL. That is all.

Mr. EDMONDSON. Mr. Chenoweth.

Mr. CHENOWETH. You say you operate some truck mines yourself?

Mr. RIGG. No, sir. I am associated with some gentlemen who do, and in their employ.

Mr. CHENOWETH. How many mines do you run?

Mr. RIGG. There is the Henry Coal Co., the Jackson Coal Co., the Caledonia. They are three operating companies. And we have the Allen Land Co., which owns the land and takes the royalty.

Mr. CHENOWETH. How many men do you employ in these companies?

Mr. RIGG. I am not qualified to answer that. I guess we mine approximately 15 cars a day. I would estimate there are some 100 men involved.

Mr. CHENOWETH. It is a pretty profitable operation, very successful; is it?

Mr. RIGG. I would say this, along the lines of stabilization:

There are days when we make some money on our coal and there are days when we do not. We try to run our business on a stable level.

Mr. CHENOWETH. How many days a week do you work?

Mr. RIGG. I guess we will average probably, taking everything into consideration, 3½ to 4. We are among the class of small operators who, when there is a car shortage, feel it.

Mr. CHENOWETH. If you could average 4 days a week, you are not going to do too badly.

Mr. RIGG. No, sir. But, as I started to point out, there are some days when we make money on our coal and some days when we do not.

Mr. CHENOWETH. What do you mean by that?

Mr. RIGG. I mean this: that the market, of course, varies, and we like to keep our men working. Whenever we have a car shortage,

of course, our men are off, and that tends to draw them away from the mines, and some of those men you are naturally going to lose.

Mr. CHENOWETH. A car shortage just lasts a day or two usually; does it not?

Mr. RIGG. Sometimes; yes, sir.

Mr. CHENOWETH. You are not talking of prolonged car shortages of a month or two. I assume they are just temporary shortages.

Mr. RIGG. Yes; they are just temporary. Sometimes they last longer than others.

Mr. CHENOWETH. You mean you are losing men from your mines because they cannot work on account of a car shortage?

Mr. RIGG. Yes, sir.

Mr. CHENOWETH. Where do they go to work? Do they leave the community altogether?

Mr. RIGG. Some of them do. Vast numbers go to Detroit to "defense," as they call it up in our country.

Another point I might make right here: We do not depend on the export market. It is a very uncertain market.

Mr. CHENOWETH. You are not getting any export business in your companies?

Mr. RIGG. No, sir.

Mr. CHENOWETH. It is all local, domestic?

Mr. RIGG. Yes, sir. It is available to us but we cannot get our high dollars for our coal, but we like to keep our business going and work every day, and we cannot do that and depend on the export business.

Mr. CHENOWETH. Do they pay more for export coal than for domestic?

Mr. RIGG. Yes, sir.

Mr. CHENOWETH. What is the differential—how much?

Mr. RIGG. That is a hard question to answer, and I am not qualified, but I would say approximately 25 cents.

Mr. CHENOWETH. A ton more?

Mr. RIGG. Yes, sir.

Mr. CHENOWETH. For export coal?

Mr. RIGG. Yes, sir.

Mr. CHENOWETH. Who gets that 25 cents more? Who profits by this 25-cent differential?

Mr. RIGG. The people who do sell to export.

Mr. CHENOWETH. How can he afford to pay 25 cents more? His broker gets more for his export coal?

Mr. RIGG. The export coal brings more down at Tidewater than domestic coal does, say, down at Tennessee.

Mr. CHENOWETH. Of course, you have the transportation cost of getting it down there.

Mr. RIGG. Yes; but that is compensated for by the higher price.

Mr. CHENOWETH. Your companies are doing all right now, as I understand it.

Mr. RIGG. We are solvent, and we made some money last year; yes, sir.

Mr. CHENOWETH. And will probably have a better year this year?

Mr. RIGG. Possibly, depending on conditions.

Mr. CHENOWETH. I hope you do.

Mr. RIGG. Thank you.

Mr .CHENOWETH. I wish you success.

Mr. RIGG. I appreciate your interest.

Mr. CHENOWETH. That is all.

Mr. EDMONDSON. Mr. Jennings?

Mr. JENNINGS. I do not have any questions.

I would like to compliment you on your statement, because I think you pointed out something that is very essential to this business, and one of the things that research might do, and that is level this off rather than have it going up and down, breaking people and then flourishing.

Thank you, Mr. Rigg.

Mr. RIGG. Thank you.

Mr. EDMONDSON. Off the record.

(Discussion off the record.)

Mr. JENNINGS. The only witness we have—and as I said he is not a witness. I would like to recognize Col. Lee Long, who has been in this business over a number of years, former president of the Clinchfield Coal Corp., who has seen coal operations from practically every angle.

Mr. EDMONDSON. Colonel, we would be pleased to hear from you.

STATEMENT OF LEE LONG, CLINTWOOD, VA.

Mr. LONG. Gentlemen, I have had absolutely no experience with the subject you are talking about today with respect to the development of coal markets through the plan that has been discussed here today. I have had no experience with that.

My experience with respect to the combustion of coal has been largely through my association with large plants where the consumption is technical, and probably the most of it is practical. That is the combustion part of the hand-fired, starting 40 years ago when I first had my experience.

But I have listened with a great deal of interest to the discussion of this research plan today, and it seems to me that this plan properly set up, handled, organized, would probably be the means of, to a large extent, stabilizing this industry. If nothing more, sort of a clearing house that would provide some management control that would keep everything stabilized, and a lot of the headaches that the coal people are subject to would be eliminated.

If that could not be done, I have no suggestion as to what might be done as an outcome of this very interesting meeting. I cannot think of anything, any worthwhile use of the information obtained here today unless that stabilization could result.

Mr. EDMONDSON. Colonel, do you feel that the proposal of the National Coal Association for a commission, with representation from industry and from Government and from other interested groups, would be the ideal for a Government program, or would you rather see it in the Bureau of Mines?

Mr. LONG. It seems to me that the coal-industry management, to start with, should be willing to undertake its full obligation with respect to cooperating with whatever agency might be set up that it would be to work with.

You understand my thought on that?

Mr. EDMONDSON. I believe so, sir.

Mr. LONG. You know my thought is that the coal industry has a job to do and an obligation to perform, without depending too much upon Government or too much upon any other means of financing. It should be willing to do its full share under an organization that would be workable and take the job as a permanent thing, not as a flash in the pan or something of that kind, but build stability into the business.

Mr. EDMONDSON. I understand that over 200 concerns are presently behind this Bituminous Coal Research, Inc. Do you think that represents a substantial effort on the part of the coal industry?

Mr. LONG. I think it does, very decidedly. As I think of it now and think a little bit more about the potentials in working with an organization of that kind, it would be a wonderful help.

As I said a while ago, this bureau could be a clearinghouse arrangement that would have the result of keeping all the elements in line with the job that you plan to do.

Mr. EDMONDSON. Do you have any questions, Mr. Aspinall?

Mr. ASPINALL. I have one question.

Whom do you include in the coal-mining industry?

Mr. LONG. I include any mining organization, any mining company, corporation, that is of sufficient size to represent a potential part of real industry, properly organized.

Mr. ASPINALL. How about the workers who depend upon the industry?

Mr. Long. The workers. I do not believe that workers are much of a problem, if you can stabilize the business.

Mr. ASPINALL. Do you think they should make some contribution?

Mr. LONG. The workers?

Mr. ASPINALL. Yes.

Mr. LONG. I do not believe it would be fair to ask the workers to make any contribution at all, if they do a good job of work.

Mr. ASPINALL. You do not think the United Mine Workers organization might be able to contribute a little bit?

Mr. LONG. I do not know about their ability to do it, but I would hesitate to ask that.

Mr. ASPINALL. Let's go to the other side of the coin.

How about these landowners?

Mr. LONG. The landowners?

Mr. ASPINALL. Who have come in here and bought the mineral rights and receive a return from rentals and royalties, and seemingly have the mine operators, some of them at least, under their thumbs with a 30-day revocable contract. Do you think they ought to pay a little bit to this?

Mr. LONG. That 30-day lease——

Mr. ASPINALL. I do not care about that. I understand that. I want to know whether or not you think that they ought to contribute something to seeing to it that the coal industry is stabilized, as you suggest.

Mr. LONG. Well, I had not thought about that phase of the situation.

Mr. ASPINALL. I suppose if Uncle Sam collects income taxes off of them, then Uncle Sam makes a contribution, and they would contribute a little bit indirectly. But do you think that is sufficient? If

their returns depend upon a healthy mining industry, should not they be interested in it?

Mr. LONG. I would hesitate, sir, to express an opinion on getting all of the parties at interest into making contributions. I believe it would be more or less unwieldy. That is a phase that I would not at this time express an opinion on.

Mr. ASPINALL. All right.

Mr. EDMONDSON. Mr. Chenoweth.

Mr. CHENOWETH. How many years have you been connected with the coal industry?

Mr. LONG. I have been in the business for a little over 50 years.

Mr. CHENOWETH. As you look back over that period, would you say that the coal industry has been negligent or lax in not promoting a more effective research program on its own accord?

Mr. LONG. Well, sir, I have not thought about the past so much as I have right recently since this research plan has been proposed. I cannot understand just how we have gotten along as well as we have without it.

Mr. CHENOWETH. There has been research in coal, has there not?

Mr. LONG. There has been, but it has not been carried on, in my opinion, in a very practical sort of way.

Mr. CHENOWETH. Do you think the industry is to blame for any lag in the movement then, or lack of foresight in originating a program of its own?

Mr. LONG. I think at this time an industry that represents as much as the coal industry does could hardly escape some censure for not having done more.

Mr. CHENOWETH. You feel more could have been done?

Mr. LONG. I do; yes, sir.

Mr. CHENOWETH. Which would have been of benefit to the coal industry, and they would have profited by it?

Mr. LONG. That is my notion about it exactly.

Mr. CHENOWETH. I think that is all.

Mr. EDMONDSON. Mr. Jennings.

Mr. JENNINGS. No questions.

Mr. EDMONDSON. Thank you very much, Colonel, for your contribution.

Are there any further witnesses to be heard by the subcommittee?

Mr. JENNINGS. That is all I know of.

Mr. EDMONDSON. Is there anyone here in opposition to the idea of an effort at a coordinated research program?

If not, then I will say once again, many thanks to Congressman Jennings and to his very able staff for the fine accommodations and arrangements that have been made for the subcommittee in this hearing.

I want to thank the citizens who have been in attendance and who have testified for their very fine contribution which they have made to the information and the knowledge of this subcommittee.

I hope by the time we have completed the field hearings and the summation hearings in Washington that we will be able to come up with a constructive program that will represent the best thinking of the people most interested in this overall problem, the thinking of people in the ranks of industry, in the ranks of education, in the ranks

of labor, in the ranks of different State development and planning organizations, that will provide the best benefit to the country as a whole.

In a sense, we of this subcommittee are engaged in a research program ourselves. We are researching the problem of the coal industry, and without your cooperation, of course, it would not be possible to come up with any answers.

We are very grateful to you for your help and for your cooperation.

The subcommittee will stand adjourned.

(Whereupon, at 4:30 p. m., hearing in the above-entitled matter was adjourned.)

COAL

FRIDAY, FEBRUARY 22, 1957

HOUSE OF REPRESENTATIVES,
SPECIAL SUBCOMMITTEE ON COAL RESEARCH OF THE
COMMITTEE ON INTERIOR AND INSULAR AFFAIRS,
Wilkes-Barre, Pa.

The special subcommittee met, pursuant to notice, at 10:30 a. m., in the Federal Building, Hon. Ed Edmondson, chairman of the special subcommittee, presiding.

Present: Representatives Edmondson (chairman), Aspinall, Metcalf, Udall, Saylor, and Chenoweth.

Also present: Representative Daniel J. Flood, of Pennsylvania, and George Soule, professional staff member.

Witnesses and others also present—

Representing chambers of commerce of anthracite region: Wm. O. Sword, president, Greater Wilkes-Barre Industrial Fund, and chairman of the board, Greater Wilkes-Barre Chamber of Commerce; Edmund H. Poggi, president, Greater Wilkes-Barre Chamber of Commerce; J. M. Crosby, executive secretary, Greater Wilkes-Barre Chamber of Commerce; H. Allen Larsen, executive director, Wyoming Valley United Fund; Rev. Jule Ayers, First Presbyterian Church of Wilkes-Barre; Joseph McGowan, Scranton Chamber of Commerce.

Representing anthracite producers: F. O. Case, president, Glen Alden Corp., Wilkes-Barre; George J. Clark, president, Reading Anthracite Co., Pottsville; John G. Connell, president, Connell Coal Co., Hazelton; Joseph Crane, vice president, Panther Valley Coal Co., Lansford; F. W. Earnest, Jr., president, Anthracite Institute, Wilkes-Barre; J. D. Jillson, vice president, Anthracite Institute, Wilkes-Barre; G. B. Fillmore, president, the Hudson Coal Co., Scranton; C. A. Gibbons, president, Susquehanna Collieries, Nanticoke; Wilmot Jones, vice president, Jeddo-Highland Coal Co., Scranton; Earl W. Lamb, vice president, Moffat Coal Co., Scranton; J. A. Martin, president, Pennsylvania Coal Co., Scranton; James Tedesco, secretary, Pagnotti Coal Co., Pittston; H. B. Wickey, vice president, Lehigh Valley Coal Co., Kingston; and Sheldon P. Wimpfen, vice president, Glen Alden Corp., Wilkes-Barre.

Representing the Commonwealth of Pennsylvania: Hon. Joseph T. Kennedy, secretary of Mines and Mineral Industries, Harrisburg, and D. L. Corgan, secretary, Anthracite Committee, Harrisburg. Ralph Lambert, Department of Mines and Industry, Wilkes-Barre.

Representing United States Bureau of Mines: J. A. Corgan, Chief, Anthracite Division, Washington, D. C.; Harry Perry, Chief, Bituminous Coal Research Branch, Washington, D. C.; Charles S. Kuebler, Director, Anthracite Experimentation Station, Schuylkill Haven, Pa.,

and J. W. Eckerd, Chief, Branch of Utilization and Preparation, Schuykill Haven, Pa.

Representing United Mine Workers of America: M. F. Brennan, president, district No. 7, Hazelton; Joseph T. Kershetsky, president, district No. 9, Shamokin; and Frank Cardoni, assistant to president, district No. 1, Wilkes-Barre.

Representing railroads: Alfred W. Hesse, Jr., assistant general counsel, Reading Railroad Co., Philadelphia, Pa., and J. P. McDonald, coal traffic manager, Lehigh Valley Railroad Co., New York City, N. Y.

Mr. EDMONDSON. The subcommittee will come to order.

This is the third field hearing of the Subcommittee on Coal Research of the House Committee on Interior and Insular Affairs.

We are pleased to be in the district of Pennsylvania represented by the Honorable Dan Flood. Mr. Flood is here with us this morning to speak, as he always does, in behalf of the anthracite coal industry. We are going to ask you, Dan, to present the witnesses who are here this morning and tell us a little bit about them, if you will.

Mr. FLOOD. Thank you, Mr. Chairman.

As you have indicated, I am pleased to be here as a guest of your committee in my hometown. My purpose this morning is to present the witnesses as you have suggested. I have testified on this subject at the original hearings of your distinguished subcommittee in Washington last year. The first witness that we have for this morning is Edmund H. Poggi, who is the president of the Greater Wilkes-Barre Chamber of Commerce. Mr. Poggi is a member of the great real-estate business of our area of Pennsylvania; he is an official of the real estate board; he is a native son of our community; and, as you can imagine, he is entirely conversant with the problems of the industry in relationship to the economy of our area.

May I present Mr. Poggi.

Mr. EDMONDSON. Mr. Poggi, we are pleased to have you here today as a witness.

May I say, preliminarily also, if there are any other people in the room who wish to be heard and whose names have not been supplied to Mr. Flood, if you will get in touch with Mr. Soule of our committee staff or with Mr. Flood, they will see that your name is added to the list of witnesses.

Mr. Poggi, will you proceed with your statement?

STATEMENT OF EDMUND H. POGGI, PRESIDENT, GREATER WILKES-BARRE CHAMBER OF COMMERCE

Mr. POGGI. Thank you, sir.

Honorable Congressmen of the Committee on Interior Affairs, our own Congressman Flood, distinguished citizens of the mining industry, labor, government, and fellow citizens of the greater anthracite area: I am here really this morning, not as a witness, as I might say, but as a representative of the entire area to welcome you gentlemen, to thank you for taking the time of a very busy, harassed existence, especially in view of the fact you had to get up so extremely early this morning to take the train to be up here with us.

We—and I speak not only for the Greater Wilkes-Barre Chamber of Commerce, but the entire area—are filled with gratitude for the

opportunity given to us to express and be able to have our experts express some of our needs, problems, and what we think might be accomplished through an expanded research program.

Speaking for myself, certainly we have no interest in usurping, nor could I, the message which the experts will bring to you later. They are the ones who are prepared in their fields to do it, trained in their fields, both from an economic, social, and human viewpoint as well as the viewpoint of industry and labor itself.

They are the ones who will describe to you the feelings of the anthracite area and how, perhaps, an expanded research program can further usage and development of the great natural resource of the source of power.

My purpose is again to say, thanks a million for coming here and being with us and giving us the opportunity.

If you wish to ask questions, fine; you will have the expert witnesses coming up in a moment.

Mr. EDMONDSON. Thank you very much, Mr. Poggi. Do any members of the committee have any questions?

Mr. ASPINALL. Mr. Poggi, do you have a witness who will testify as to the importance of the anthracite industry as far as the economy of this area is concerned?

Mr. POGGI. Yes, sir, Mr. Aspinall, there will be a witness on that.

Mr. ASPINALL. That is all.

Mr. EDMONDSON. Thank you very much.

Dan, would you call the next witness?

Mr. FLOOD. The next witness, Mr. Chairman, is Mr. H. Allen Larsen, who is the executive director of the Wyoming Valley United Fund. As his title would indicate, we have in this community, as we have in many such communities in the country, the present system of a joint or a unified charitable collection and administration.

We had the Community Chest developed from a group of some 30 or 40 individual agencies. After many years of experience with the Community Chest, then the new sociological development became known as the United Fund, and it is self-definitive. We have a very effective, a very successful United Fund organization, based upon the city of Wilkes-Barre, but which takes in nearly all of the county of Luzerne except the Greater Hazelton area, about 25 miles from here.

This man is a trained and professional sociologist and social administrator. He has been identified with us for many years. I happen to be a member of the board of directors and so are several of the other witnesses here. So, Mr. Chairman, Mr. Larsen for the United Fund.

Mr. EDMONDSON. We are very pleased to have you with us here this morning, Mr. Larsen. We notice you have a report. Is this in connection with this testimony?

Mr. SOULE. I understand it is.

Mr. EDMONDSON. You may either read this or may have it inserted in the record, as you like, and comment upon portions of it.

STATEMENT OF H. ALLEN LARSEN, EXECUTIVE DIRECTOR, WYOMING VALLEY UNITED FUND

Mr. LARSEN. The latter suggestion is the one we would like to take, and place the report on file and comment and make recommendations concerning the report, if that is permissible with the committee.

Mr. EDMONDSON. If there is no objection, the statement will be made a part of the record.

Mr. FLOOD. Mr. Chairman, my attention has been directed to the fact that the statement you have before you contains, as well, the statement of other witnesses who follow. So I presume that this witness speaks only for himself at this point.

Mr. LARSEN. The witness does speak only for the first part of this report, which goes through and up to the statement of Reverend Ayers.

Mr. EDMONDSON. The first six pages?

Mr. LARSEN. Yes. Reverend Ayers will comment on the next part of the report.

Mr. EDMONDSON. You may proceed.

(The statement referred to follows:)

A REPORT ON SOCIOECONOMIC STATUS OF THE ANTHRACITE AREA SUBMITTED BY THE COAL RESEARCH COMMITTEE OF THE GREATER WILKES-BARRE CHAMBER OF COMMERCE, WILKES-BARRE, PA.

I. INTRODUCTION

The Greater Wilkes-Barre Chamber of Commerce is cognizant of the tremendous economic and sociological changes which have occurred in the city of Wilkes-Barre and the territories encompassed by the hard-coal fields in Luzerne County, Pa., of which Wilkes-Barre is the principal city. Aside from any effect on the local area, it is our complete conviction that the changes which have occurred are to the detriment of a mineral reserve which is of vital importance to the people of the United States.

Again, the changes which will be hereinafter specifically set forth have effected the manpower reservoir which in turn affects the availability of anthracite. Therefore, economic and sociological changes in this area of Pennsylvania substantially affect the availability of anthracite. Such changes can be harmful to the United States and its potential dependence in an emergency on the anthracite resources. Also, anthracite is important as a mineral in the long-range conservation program of the United States because of the limited oil and gas resources. In the event of war or other major causes of inaccessibility, the oil supplies must be supplemented by anthracite, particularly in home heating. We propose to submit certain information and data which, from a statistical point of view, reflects the sociological and economic changes that have occurred as a result of the decline of the anthracite industry. This data will be followed by opinions of leaders in our community who, by virtue of their respective professions, are in a position to understand the social impact which the decline of anthracite has had upon the people of this area.

We believe it in order to first submit data which describes the condition of the anthracite industry in Luzerne County, exclusive of the Hazleton area from 1948 to 1955.[1]

Anthracite production declined from 18,067,000 tons in 1948 to an estimated 7,690,000 tons in 1955. This represents a decline of 10,377,000 tons or 57.4 percent.

The value of the product, f. o. b. mines, declined in the same period from $159,978,000 to an estimated $71,890,000, a drop of $88,288,000 per year, or 55.2 percent.

Average employment declined from 29,326 men in 1948 to an estimated 11,300 men in 1955, a decrease of 18,026 employees, or 61.5 percent.

Working time, which totaled 278 days in 1948, was only 212 in 1955. This resulted in a decline in man-days of work from 8,152,628 in 1948 to 2,396,000 in 1955, a reduction of 70.6 percent.

Assuming that sales of anthacite have averaged 2,386,000 tons in the local area (which they did in the years 1948–54), the loss in outside shipments has amounted to 7,991,000 tons per year.

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[1] U. S. Department of the Interior, Bureau of Mines for 1948; same for 1954. Estimated for 1955 on basis of reports of the Pennsylvania Department of Commerce Anthracite Committee, scaled from 1954. U. S. Department of Labor, Bureau of Labor Statistics. Eastern railroads Presidents Conference 1956 Year Book, and private estimates, Anthracite Institute.

If an assumed 80 percent was rail transported at the average freight rate of $3.34 per ton of all sizes to all destinations, the annual loss in railroad revenue would have been $21,352,000.

Since 48.7 percent of railroad revenue goes to labor, the loss in railroad wages would have approximated $10,398,000 per year. As the average annual wage on the railroads is $4,719 per employee per year, this has cost the equivalent of the jobs of 2,204 employees of the 6 railroads serving this area.

Assuming that the remaining 20 percent of outside sales moved by truck at any average rate of $2.50 per ton, the loss of revenue to truckers to outside points would approximate $4 million per annum, a goodly portion of which would have gone to wages.

The present average wage of miners is $2.58 per hour. On the basis of a 7-hour day, this averages $18.06 per day, and at the average output of 3.33 tons per man per day, amounts to $5.42 per ton (overall industry average). Thus the loss of wages between 1948 and 1955 at prevailing rate has amounted to approximately $56,250,000 annually.

This tremendous decline in the economy of the anthracite-producing and -transporting industries and their employees has had very serious adverse effects, not only on local business, but on supplying industries such as explosives, cement, lumber, electrical appliances, etc., and on the railroads which formerly transported such goods for consumption in the mining region.

II. STATISTICAL ANALYSIS OF THE SOCIOECONOMIC CONDITIONS

As a direct result of the decline of the industry as herein before set forth, the following changes have occurred:

A. The reservoir of manpower available for coal mining has contracted severely because the anthracite industry has declined. In 1948 there were 29,326 employed, and in 1955, 11,300, a decrease of 61.5 percent.

B. As a result of this, the area population has declined and aged.[2]

1. Population in Luzerne County—1940, 441,518; 1950, 392,241—11.2 percent. Two major coal-mining centers declined in the county—11.6 percent (Exeter) to 19.7 percent (Plains) from 1940 to 1950.

Population changes in principal Luzerne County communities

	Decrease, 1940–50 (percent)		*Decrease, 1940–50 (percent)*
Newport	18.5	Exeter	11.6
Jenkins	15.3	Wilkes-Barre	10.9
Plains	19.7	Nanticoke	17.3
Ashley	17.7	Pittston	15.8

It is interesting to note that in one community where there is a substantial and good reservoir of coal which is being actively mined, there is reflected a rapid growth.

Hanover population growth

1940	13,076
1950	14,048
Increase, percentage	7.4

2. Since 1951, the trend has continued as evidenced by:[3]

(*a*) Live births—Wilkes-Barre, the county seat:

Resident births, Wilkes-Barre, 1950–56

1951	1,346	1955	1,165
1952	1,209	1956	1,106
1953	1,187	Decrease, percentage (1951–56)	17.8
1954	1,098		

[2] Bureau of the Census, U. S. Department of Commerce.
[3] City of Wilkes-Barre, Pa., Board of Health.

(*b*) School attendance has dropped.

School attendance[1]

Year	Larksville	Edwardsville	Swoyersville	Wilkes-Barre
1951–52	945	1,036	928	8,485
1952–53	925	1,009	871	8,329
1953–54	932	967	806	8,254
1954–55	906	945	789	8,178
1955–56	865	927	730	8,073
Decrease percent, 1951–56	8.5	10.5	21.3	4.9

[1] Luzerne County and Wilkes-Barre school attendance reports.

3. The principal population reduction has occurred in the age groups which would be available for employment in mining. For example, in Luzerne County, people 15 to 34 years of age represent approximately 31 percent of population compared to 38 percent in 1940.[4]

4. At present, the prognosis for the future is no better for manpower in mining:[5]

(*a*) County birthrates are at a lower level than the country as a whole (1950), 1.9 percent of total number to 2.4 percent.

(*b*) Number of county persons under 5 years of age are 9 percent of county population as compared to 10.7 percent in the country as a whole.

(*c*) Six-percent increase in people 45 and over, 1940–50 (Luzerne County).

C. Also, as a result of the decline in the anthracite industry, family income is low in the county. In 1949 median family income in Luzerne County was $2,863 per family compared to $3,182 for Pennsylvania. This disparity has continued and is enlarged. The median income for Wilkes-Barre was $2,945; Nanticoke, $2,797; Pittston, $2,581.

By contrast, the strongest mining community, Hanover, in the anthracite area enjoyed a family income of $3,152 in 1949, or $289 per family above county average.[6]

Due to the decline in the anthracite mining, the area has a comparatively large labor supply which has resulted in lower earnings for employees in industry in this area as compared to other areas in the State.[7]

City	Average hourly earnings		Average weekly earnings	
	Amount	Percent variation, Wilkes-Barre-Hazleton	Amount	Percent variation, Wilkes-Barre-Hazleton
Allentown-Bethlehem-Easton	$2.04	+34.2	$82.62	+49.8
Harrisburg	1.82	19.7	70.98	28.6
Lancaster	1.73	13.8	71.28	29.2
Reading	1.83	20.4	72.83	32.0
Scranton	1.55	2.0	60.61	9.8
Wilkes-Barre-Hazleton	1.52	0	55.18	0
York	1.69	11.2	68.28	23.7

D. All of these factors have had a marked effect on the county as a whole. Several indications are as follows:[8]

1. Housing: In the United States, 20.7 percent of housing has been constructed since 1940. In Pennsylvania the figure is 11.6 percent. In Luzerne County only 4.1 percent of housing has been constructed since 1940, and in 1 city in the county (Pittston), this percentage is as low as 0.4 percent. Others are Nanticoke, 0.6 percent; Wilkes-Barre, 1.2 percent.

2. Public assistance: Luzerne County, which ranks fifth in population in the State, ranks third in the number of cases on public assistance.

[4] Bureau of the Census, U. S. Department of Commerce.
[5] Bureau of the Census, U. S. Department of Commerce.
[6] Bureau of the Census, U. S. Department of Commerce.
[7] Pennsylvania Employment and Earnings, Bureau of Employment Security, Pennsylvania Department of Labor and Industry, vol. No. 9, September 1956.
[8] Bureau of the Census, Department of Commerce.

III. OBSERVATIONS

As a result of the above data, there is a substantial decline in the number of persons who are available for employment in the mining industry. Ways and means must be devised to encourage the participation of younger men in this occupation. A strong research program with resultant improved mechanization would serve to stimulate confidence so that persons now employed in the mining industry would seek improvement of their occupational classifications. We repeat, what is most significant, namely, that trained manpower is essential to maintain the availability of anthracite.

We have seen, also, from the foregoing statistics what is happening to our population in movement and in age. There are other social changes resulting from the general economic situation of great importance, not so measurable statistically as changes in population.

We have situations where many men in our community are living and working apart from their families 5 or 6 days a week, and where in all too many households, mother is working and children are left without adequate supervision. This is weakening our community.

We have asked that more complete comments on our community's situation be made by persons intimately acquainted with family life through schools, churches, social agencies, and the juvenile court.

Mr. LARSEN. We did not want to take the time to read this whole report, and we appreciate the committee's suggestion that we place it on file. We are also making available further copies of this report that can be taken with you to Washington if you so desire.

In working on this report, there were four persons appointed by the chamber of commerce to develop the statistical analysis of the socioeconomic conditions which were brought to our attention through the various resources that not only are at our disposal but, of course, at the disposal of all general community activities.

Some of the most important things we have seen that have happened to our community, particularly in the years since 1940–48 through 1955 have concerned us with some deep worry about the socioeconomic conditions in our valley.

In 8 years we have seen the railroad traffic, employment in mines, mining itself, and other related items cut practically in half, in fact, as much as 60 percent. The committee can refer to the statistics prepared for us by Mr. Earnest relative to the employment in the anthracite industry and the production of the anthracite industry and the railroad traffic.

In affecting our county, these things have taken their toll in terms of the county population. We found that the county population decreased from 1940 to 1950 by 11.2 percent; that live births have decreased by 17.8 percent in one of our most prominent communities; that school attendance is down as much as 17 percent in one community.

We find that our population has been aging severely. For example, people in the age bracket between 15 years and 34 years represented 38 percent of the population of the county in 1940. It is estimated now that only 31 percent of the population is in this age bracket.

There is one notable exception to these facts that seems to prove them in terms of the effect that the decline of the mining industry has had on this Community. This exception is the community of Hanover, where there has been a great deal of activity in the mining industry, employment in the mining industry has been high. In this community the median income is higher than the whole county, and there has been a regular increase in the population.

One of the things that struck the special committee that made up this report was that the availability of manpower for work in the

mines has been sharply curtailed. The committee came to feel that the availability of anthracite is most important in the general economic structure of this country. Particularly, we had feelings for the need of anthracite in home heating, especially during times of stress or war or emergency when other resources used in home heating, particularly, might be inaccessible.

With the people leaving the area, with the mining employment going down, there is not a ready supply, or there will not be a ready supply of trained people to work in the mines at a time when the anthracite might be needed to carry us over some emergency.

We feel that a strong Federal program of research will do much to establish confidence in the anthracite industry, and this confidence will help to keep people here in this area.

Not only because of the increased activity in anthracite that probably would result from a strong research program, but because of the confidence of the people that work in the industry would have in the industry itself and its future, which would cause them to stay here and continue their work in the mines.

We know that the coal resources of our community and our Nation need to be safeguarded, that they are a great natural resource, and that the people that live in this area will be the people responsible for the greatest part of the production of this material in the future.

Now the statistics we have presented in the report tell only a part of the story. The impact of the decline of the anthracite industry is felt most severely in the community itself, and in some of those areas where statistics just do not tell the story.

I would like to end my part of this report and let the next witness pick up on the observations that have been made by several people in our community who are in a position to tell the committee more about the sociological aspects of the decline of the anthracite industry.

Mr. EDMONDSON. All right, sir.

The witness who follows you will be along the same line?

Mr. LARSEN. Yes.

Mr. EDMONDSON. I think the committee's purposes might be served by holding questions until each witness on the same subject is finished. If you will move to the next chair, we will have the next witness then.

Mr. FLOOD. The next witness, Mr. Chairman, is Dr. Jule Ayers. Dr. Ayers is a minister of the gospel of the First Presbyterian Church in Wilkes-Barre. I am very fond of this fellow. I have known him a long time. He is one of the young dynamic clergymen of this neck of the woods, and as a true man of God his concern is also with the civic and economic and sociological problems not only of his own parochial area, but of the entire community. When you hear him, I think you will find better words than your own to recognize his worth to us.

Dr. Ayers.

Mr. EDMONDSON. Dr. Ayers, we are very pleased to have you here this morning.

STATEMENT OF REV. JULE AYERS, MINISTER, FIRST PRESBYTERIAN CHURCH, WILKES-BARRE, PA.

Reverend AYERS. Mr. Chairman, members of the committee, Congressman Flood.

Mr. EDMONDSON. Dr. Ayers, I notice you have a brief written statement and attached thereto the statement of Hon. W. Alfred Valentine, president, judge of the 11th judicial district of the Commonwealth of Pennsylvania; the statement of Joseph Boyle, supervisor of the guidance department of the Wilkes-Barre city schools; the statement of the Rev. Matthew F. Boylan, director of the Catholic charities.

Would you like to file these statements along with yours?

Reverend AYERS. I would like to, and I would like to speak on behalf of the remaining portion of the written report.

Mr EDMONDSON. Without objection, these statements will be made a part of the record at this point.

Mr. ASPINALL. Reserving the right to object, and I do not intend to object, Mr. Chairman, I wish to just ask Dr. Ayers whether or not these other statements were prepared by the gentlemen to whom they are attributed?

Reverend AYERS. Yes; they were, in their entirety.

Mr. ASPINALL. That is all.

Mr. FLOOD. May I interrupt, Mr. Chairman, to point out this group of witnesses, as you gather—Mr. Larsen, Dr. Ayers, and the other witnesses who are submitting their reports—are the members of a special committee set up in the community as the result of the existence of your committee, and they have met and have been functioning locally for the purpose of serving you as a special committee to report to your committee.

Mr. EDMONDSON. We are very pleased to have their statements for the record, and if the gentlemen responsible for them are present, we would be pleased to have them at the witness table for the question period.

Are any of them present who care to come forward for that purpose?

(No response.)

(The statements follow:)

(The effect of the aforementioned conditions upon the families in the area of Greater Wilkes-Barre has been discussed with leaders of the moral, educational, and cultural sources in our community. As a result of an interview held, the following statements have been given:)

STATEMENT FROM REV. JULE AYERS, D. D., MINISTER OF THE FIRST PRESBYTERIAN CHURCH, AND PRESIDENT, FAMILY SERVICE ASSOCIATION OF WYOMING VALLEY

The Family Service Association has found that economic conditions in this area have strong influence upon family life. In one case, a father resorted to drinking heavily within a year. In another case, the wife began running around with other men, leaving the children unsupervised at home.

Our agency finds that repeated trips, and traveling is exhausting to the man. The roads in certain seasons are dangerous, also. Moreover, such travel increases the cost of living for the family. As a result, travel tends to decrease and family life suffers even more.

Prolonged separation affects both the marital relationship and the parent-child relationship. Cases of adolescents getting into sexual difficulties result from these conditions.

Some families with close ties here move, and then spend considerable money on trips back to be with relatives and friends. This leads to a dislocation in the family economy, and also means that strong roots are not established in the new community.

Because of lack of employment for men here, many women become the chief wage earners. This leads to a reversal of roles in family life, and results in further disintegration in family life.

With the mother working, and oftentimes the father out of the community, too much responsibility is left with children for their age. They are left to get their own lunches and to manage on their own after school. Young people feel that if they take responsibility in one phase of life (even to the point of becoming "latchkey children"), then they can take responsibility in other phases of life—as to whom they go out with, the time they come home, the way they spend their leisure.

Therefore, the Family Service Association feels that economic conditions here have a strong influence on family life, and this influence is not for the good. We believe that improvement in the economic base of our community would bring a corresponding improvement in family living.

STATEMENT OF HON. W. ALFRED VALENTINE, PRESIDENT, JUDGE OF THE 11TH JUDICIAL DISTRICT OF THE COMMONWEALTH OF PENNSYLVANIA

In carrying on the work of the juvenile court in this county, I have frequently observed that the separation of parents, for even a limited time, tends to cause children to get into mischief, and as a result, they become delinquent problems. Good home conditions and proper parental care are essential for a child's normal development, and when, as a result of economic conditions, home ties are severed, such situation affects not only the members of the immediate family, but society as a whole. So, also, not infrequently, the employment of both parents tends to deprive children of necessary supervision and guidance.

In my judgment, there is a definite need for further employment in this area. I have no doubt that if fathers, now working elsewhere, could procure employment locally and proper home relationship be restored, many children would be prevented from becoming delinquent.

STATEMENT FROM JOSEPH BOYLE, SUPERVISOR OF THE GUIDANCE DEPARTMENT OF THE WILKES-BARRE CITY SCHOOLS

We are finding that the desire of parents to remain gainfully employed—either by the father's working out of town or by the mother's working odd shifts so that one parent will be present in the house or by procuring household help when both are employed, is creating problems which are too much for either or both parents to sustain over a long period of time. The typical mother of children, whose father is working out of town is too tired, upset, or just doesn't have the strength to do the job alone and, in many, many cases, we are seeing a gradual disintegration of the standards that have prevailed in this home.

School attendance, medical attention to defects that have been reported, follow through on referral to community social agencies, attention to behavioral difficulties, and the necessary strength to deal with the routine day-to-day so-called little problems seem to become less and less important to her. Many of these mothers feel that the out-of-town job just "isn't worth it" and except for the desire to keep off the DPA rolls would promptly have the husband give up the job. Some others have done just that. One woman told me this year that she told her husband that the children would be better off in a 3-room trailer with him than in their 8-room house here.

We see the working mother—who really doesn't want to work—getting that harassed feeling trying to take care of her job, home, and children. They really feel guilty and try to justify their working on the basis of the material things they are able to get the children. But here again we see the same gradual relaxation of standards previously considered important. The concern these parents feel about the children getting out to school by themselves, or being alone in the house for lunch (even though it was prepared by the mother) or being at home alone before her return from work, isn't pleasant to see or think about. Other women will work only at night so that they can get the children off to school in the morning and be there when they come home. But the toll is being taken there, too.

These conditions are also causing the attempt to shift responsibility from the home to the school and to social agencies. Our nurses no longer take an ill child home without checking to see if the mother is there. Some parents have complained because there isn't a full-time nurse in each building to take care of sick children.

All in all, it is not a pretty picture and while we cannot measure what is happening to the children, we see undesirable things happening every day.

STATEMENT FROM REV. MATTHEW F. BOYLAN, DIRECTOR OF THE CATHOLIC CHARITIES

All families in this complex changing culture are subjected to the same pressures as other families in society. Good Christian families have a clear concept of family values but are not in a position to establish social practice which will adequately support these goals. If unhealthy external forces are pressing, lack of economic security, dispersed parents, unprotected and undisciplined children, the recognized values of family life are distorted and have their effect in attitudes. We are bound to see a change in the relationship of the child and parent, of the husband and wife toward each other and toward all the elements of good society.

The greatest change is apparent locally in the children. There is always a pull on the insecure child to be drawn toward, or to pool his personal insecurity by acting just like anyone else; by banding together with other insecure children under the leadership of anyone who can show strength of purpose, be he good or evil, be the purpose good or evil. There are few juvenile delinquents who find satisfaction in playing a lone hand. There has been a noticeable increase in juvenile court of serious crimes involving boys and girls. Automobile stealing, sex crimes, harmful possession of guns and knives, burglary instead of pilfering, the compulsive desire for unlimited cash in one's pockets, maladjusted personalities, are recognized as serious threats on the national scene and are locally becoming more evident in spite of the lower statistics and the splendid administration of the local juvenile court. These crimes can stem from poor family relationship and cannot be controlled or prevented by the community or social agencies' constant strife to improve the social and cultural tone of the community.

I am not sure that these difficulties stem only from the household wherein the father must be employed away from the home during the week. It is a pitiable and heart-touching condition when one is told that 500 men responded to a newspaper advertisement listing 20 job opportunities to sweep the floors in a local factory; or to be reminded that jobs are available on the local market for women instead of men; that mothers can find employment but fathers must be content to sit at home waiting for news of a minimum-wage job opportunity. The charge of nonsupport in the local domestic court can mean almost anything to the unhappy female breadwinner. Today she complains that her young children were neglected or left alone by the husband while she was at work. It can mean that the husband spent too much time and money out of the home at the corner tavern after she returned from work. It can mean that the husband was irritable and lost control of his temper when she reminded him of his new place of management of the home. True, these are social as well as economic factors, but they are not the result of choice but of necessity on the local scene.

There can be a tendency to search for weakness and point out defects in the local family life. However, it cannot be claimed that there is but little good and wholesome family life in our area. There are a great many good people and good families living in our communities. The defects and weaknesses of the less perfect group can be better treated or better controlled if there were fewer families less dependent on economic security. It is not always the fault of the individuals for it takes a great deal of fortitude and understanding to remain calm in the face of loss of opportunity, or with the knowledge that one cannot hope to be the parent he planned to be because of circumstances beyond his own control.

It is necessary to repeat that the basic and strongest elements of good family life, love, and security, good example, are still prevalent, and even in the weakest situation are recognized as needed, but unfortunately not always attainable. A full pantry today may lead some to depend on a false security, but to the man who has no knowledge of when he can replenish his dwindling food stock and keep smiles on the faces of his children and wife, family and community values may take a dangerous turn and sometimes finds relief in living outside recognized and desirable community standards. Thank God these persons are not more numerous than they are at present.

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Mr. EDMONDSON. Would you proceed, Doctor?

Reverend AYERS. Mr. Chairman and members of the committee, we are grateful for the opportunity of testifying at this time because we love this community, the people who live here. We find them to be earnest people, people who work hard and willingly, people who have a strong level of tolerance in their religious and social attitudes, people who industry can testify are hard workers, and not afraid to tackle important jobs and do them well.

More than that, we come here as representing people in a community who are not licked and who are not bringing to you the crying towel. We have problems, we need help. Some of those have done, not only studying but praying, and as we speak, we pray that we are guided that something of the spirit of God can touch your consciences in some what that you know that we are speaking on behalf of fellow Americans who are seeking to keep loyal to the spirit of George Washington in a community which we feel, along with the rest of our country, is precious to his spirit and to you.

Our problems route in the fact that on the whole a growing number of younger men, with desire to help their families, go away for employment if they cannot secure adequate opportunity for employment here.

Should you be in this town over weekends, oftentimes when the weather is at all tolerable, if you should be outside of a church, you would see many license plates from New Jersey and from New York, because we have men working there in good numbers. Travel over the highways in winter is expensive. It means many times, if the wife and children stay here—and as you see, they do not all stay here—this is an added cost for travel. It involves a problem of trying to maintain two households, and because of that added cost, many times the woman who lives here is obliged to work, and there are opportunities for many of our women to work.

We know that these men would prefer to be back here, not only by their desire to come back and where possible to keep their families here, but we find also that these men, being away, face temptation to drink, temptation to use their time wrongly.

Their wives back here at home—and some of this is not too different from the rest of the country we know—the wives back here many times are working during hours when, perhaps, the children are in school. Mr. Boyle's testimony will tell you that when children are sick in this community many times mother is not home. We have to call the home to see if mother is there. Mothers, and sometimes both parents, are exerting pressure upon our school system so that children will even be let out of school in order to take care of other children at home.

Now, with these children having to come home from school, oftentimes to help prepare supper, let us say, or look out for little Johnnie or Bessie, as they come home, the problem occurs that they have less supervision than they need many times, and having less supervision, they assert more freedom. They have to do some of the purchasing and getting the food ready, and by so doing they do not have a proper opportunity to take part in school activities.

After school, the teams and the clubs and the social life, and being barred from that kind of thing, by the time mother comes home at night, and they have helped get the meal and take care of Johnnie,

instead of studying they want to be off. So many times we find them going to what we call the pizza bars, the all-night pizza bars and things of that sort where they meet the girls, let us say, who have been working during the day, the girls who have been graduated from school and who are now, let us say, in our factories.

We are discovering, as the judge's testimony bears out, also, that though our social agencies, schools, and service agencies are doing their best, there is just no substitute for a sound home basis where mother and dad are here and on the job.

I am here as a clergyman. I am here because I feel that home, church, school, and community are basic to the stability of American life, and the primary group is the home. Our problem is, frankly, that with the economic difficulties we face, many leaving to go away, not all of whom are taking their families, we have a severe problem that reflects lack of supervision that makes the child insecure. Being insecure, he gets together with other insecure children.

The tendency is the grouping together of insecure children because they seldom stay alone, as Father Boylan points out. As they get together, they have led to the problem in our courts here of more serious cases in 1956 than we have had before. These serious cases are enumerated to some extent in our report.

The judge has felt that the further economic strain of late has had an additional effect since last year on the boys and girls of the community.

Now, couple all of this with the fact that these are good people, these men would prefer to stay here, and thank goodness we have other efforts on the part of business and community leaders to bring industries in and to solve our problems in as many ways as we can, using all available talent and resources.

But with it all, the more venturesome would like to stay here, but they are torn between their need to help and their hope that there can be an opportunity provided for them here.

When dad stays home here hoping for a break, and mother is out working somewhere else, then he is not in a natural environment. Not being in a natural environment, for a man to do the housework and shop and that sort of thing, as soon as mother gets home, the people say—that is, the people, the Catholic charity family service workers and others, and myself as pastor—the father heads for the hills when mother comes home. He wants to get away from these kids and duties which are not natural for him. He heads for the tavern. That is the cheapest place which has some social acceptance for him to search out. He wants to be rid of the kids and the mother.

Then we have in the domestic relations courts the problem of an earnest mother—and these mothers are often, as a result of these pressures, like wives at home during military service while the husband is away. You see the mother gets nervous. She feels guilty that she cannot both work and take care of the sick child. She gets broken down with the feeling that while she is there at home doing the best she can at night, he is off in a taproom possibly meeting someone else.

So that the domestic relations court says that they are finding women coming in there harassed and nervous because dad will not do the washing, because dad takes off.

So that our problems are pretty much in this realm of the deterioration of the home, with the lack of supervision and the lack of security

and the problems that creates. With it all, I close in this way: We are far from licked. We are grateful for all understanding and help we can get. We are going to keep fighting and working in this.

In this area, I find in the work in the church or anything else, it is like trying to move upward on an escalator that is going downward: If you stand still, you are lost, but if you keep plugging all the time, seeking what help is available, you can keep moving ahead.

Our own church last year—and this is my final word—we took 160 off the rolls. Don't think that doesn't do something to your budget, the demand for the program and everything else. Yet last year we did more for other people and we had better attendance and a more vital program than we have had in recent years.

We are in there doing our best and anything we say comes out of the hearts of brave, good people who know the difference between the major sins and the minor sins. We are not a priggish crew at all, but we are dedicated to cooperation with, and seeking the cooperation of the Government and any other forces that want to help us solve our own problems.

Mr. EDMONDSON. Dr. Ayers and Mr. Larsen, I believe this is the first discussion of the human and the family side of the coal industry's problems we have had in our hearings and we are very pleased to have the treatment of the subject. We certainly think it is an integral part of it.

I do not know who was responsible for the organization of a committee to present that side of the story to this committee, but whoever was responsible, we are grateful to him or to them.

Do you have any questions, Mr. Aspinall?

Mr. ASPINALL. Yes, Mr. Chairman.

In the first place, I want to concur with the chairman in his remarks about this being a very fine statement of what occurs when the industry in an area becomes depressed and there is a tendency for resultant actions on the community which, of course, hinder its growth and even send it backward.

If the gentlemen who testified do not have the answers to the questions I propound, just say so and they will come later.

In the first place, the statement of Mr. Larsen carries this statement on the first page:

> In the event of war or other major causes of inaccessibility, the oil supplies must be supplemented by anthracite, particularly in home heating.

The emphasis is placed on home heating. Is that all you have in mind, or what other avenues of use do you refer to?

Mr. LARSEN. I am afraid, sir, my answer would be very limited to your question, because of the information that I have as a layman in this particular industry. My information carries that anthracite is most important now in terms of home heating. That is as much of an answer as I can give.

Mr. ASPINALL. That is as far as you wish to go. Do you know whether or not there is any large amount of export trade of anthracite coal at this time?

Mr. LARSEN. I do not feel qualified to answer that question.

Mr. ASPINALL. How has the decline in the anthracite coal industry in this area affected the tax base? Will we have someone later on to testify as to that?

Mr. LARSEN. Our committee that worked on this report did not go into that aspect of the situation.

Mr. ASPINALL. Do you know whether or not those trained in the anthracite coal mining endeavors are qualified to work in the bituminous mines? Or are there specific skills which are needed for anthracite mining?

Mr. LARSEN. I would think the technical spokesman for the anthracite industry would be more qualified to answer that question.

Mr. ASPINALL. Dr. Ayers, is there sufficient good and acceptable housing within this anthracite area at the present time to take care of the population? In other words, do you need any benefits from housing legislation?

Reverend AYERS. I would prefer that someone answer that further.

Mr. FLOOD. I would suggest Mr. Poggi, a member of the real estate board for the area, might have an opinion about that.

M. ASPINALL. Do you have any other witness besides Mr. Poggi who will testify as to that?

Mr. FLOOD. I am not sure. I think maybe Mr. Sword might know something as a member of the board.

Mr. ASPINALL. We will wait then.

Do I understand from your testimony, Doctor, that with the increase in male unemployment, it is necessary for the mothers and wives of those families to get out and seek employment for the family?

Reverend AYERS. Yes, sir.

Mr. ASPINALL. Then your testimony is to the effect that either the male of the family goes elsewhere for his employment or he stays at home and does the work that is commonly taken over by the woman of the family; is that right?

Reverend AYERS. Yes, sir; that is correct.

Mr. ASPINALL. Can you tell me what percentage of your unemployed that you have at the present time as far as the anthracite area is concerned that seek work away from the community?

Reverend AYERS. I could not tell you that.

Mr. ASPINALL. Is it a relatively large part of the unemployed group, or is it a relatively small part that goes elsewhere for employment?

Reverend AYERS. There is a considerable group that I would say goes elsewhere. That is part of how we feel about the movement away.

Mr. ASPINALL. I was trying to get into my own mind, at least, whether or not some of these problems you suggest have occurred, have occurred because the male of the family has had to leave the area or because he stays at home and does the woman's work and thereby becomes more or less disheartened.

Reverend AYERS. It is both. As you know, it is both; I wish I could say which way.

There was a plant here a short time ago that advertised for someone for janitorial services, to sweep around the factory. They advertised for 20 and had 500 applications. They wanted men, and 500 applied for the 20 rather minor jobs. That does happen in this area. We see this going on. It is a little difficult to estimate which is primary.

Mr. ASPINALL. Is your testimony definitely to the point that there is more juvenile delinquency in this area presently than there was

5 years ago, or 10 years ago, or 20 years ago in proportion to the people who live here?

Reverend AYERS. On that matter of delinquency, we have 2 types of things. We have a good deal that does not reach the court.

I will answer it this way: Mr. Boyle, the guidance director said: "Of course, Judge Valentine, you only see the cases that get to the juvenile court."

Judge Jones has been seeing the domestic relations court people.

We are having an increase in cases of dependency and neglect, and in the last year we have had an increase in the proportion of juvenile delinquent cases. Judge Valentine said between 20 and 25 percent of the cases of juvenile delinquency last year could be traced to the divided home.

Father Boylan, who is in every session of juvenile court and is the Catholic social worker present, said he would put it nearer 50 percent as due to the broken home situation.

Mr. ASPINALL. Has anyone come up with a figure as to how your percentage of acknowledged juvenile delinquency problems compares with the national average?

Reverend AYERS. I do not have that.

Mr. ASPINALL. That is all.

Mr. EDMONDSON. Mr. Saylor.

Mr. SAYLOR. I would like to join with you and Mr. Aspinall, Mr. Chairman, in commending these two witnesses for their presentation, because I think they have pointed up an aspect of the impact of a deterioration of an industry which too often goes unnoticed. I think it should give the Members a great deal of concern, and I know that the report that has been presented to us will give us a great deal of meat to work on.

I would just like to ask several questions.

Mr. Larsen, as a sociologist, do you feel that this problem which you have pointed out, and which has been pointed out in your report, is due basically to the fact that the principal industry in this area is coal?

Let us phrase it in another way: Do you feel that the things which you have pointed out in this report would be duplicated in any area wherein the principal employment falls off to the degree that it has fallen off here in the anthracite fields?

Mr. LARSEN. I would say so, very particularly with reference to my native area of New England where employment fell off so severely in the textile mills up around Lawrence and Lowell, and a similar thing happened. Those areas, for a span of time, became declining communities, and a similar thing happened there as in this particular area.

Mr. SAYLOR. I did not notice in the statement, in a hurried reading of it, but will you agree with me that the principal industry in this area is anthracite coal?

Mr. LARSEN. Yes.

Mr. SAYLOR. You stated in your testimony that you feel that a program of research would be instrumental in keeping people here. Just how, Mr. Larsen, do you feel that the social impact would be helped by a research program?

Mr. LARSEN. As I mentioned in my observation on the report that we made, I felt that this research program, and those of us on the com-

mittee felt this way: That the research program would establish confidence in the industry as a whole.

I have been advised that there are generally 2 classifications, for instance, in the people who work in the mines, 2 general classifications: The miner, the skilled worker who actually mines the coal, and the laborer, the person who does the work with the miner in getting the coal out, and so on; and that one of the things that has held back some men in trying to be miners, to be skilled workers in the mines, has been this feeling that if they spend all this time in training to pass the tests and so on, it will not be worth it because the mining industry is on its way out, is going down hill. And this is the feeling about the coal industry.

For instance, even in the united fund for a number of years—not recently, but for a number of years, the united fund, or the chest, budgeted a huge sum of money because of the idea that the employment in the coal-mining industry would be going down so severely we would have to allocate a new sum of money just to pick up for the losses we would have on the pledges made by the mine workers, who are very large contributors, very generous contributors, to these community chest organizations.

That in itself has taken money away from the services other people should be getting, that these miners should be getting themselves.

Does that answer your question?

Mr. SAYLOR. I think it does.

Now, Reverend Ayers, I am delighted with your statement there is no substitute for home training. I heartily agree with you.

Do you feel that if the anthracite fields were once again in a healthy condition that the young people who have been leaving this area would remain here?

Reverend AYERS. Yes, sir; I do. May I say a word to that?

Mr. SAYLOR. Surely.

Reverend AYERS. We have three colleges here, and they are all good colleges. We have some preparatory schools here, and we have a system of high schools which is excellent, and I think one reason there is a reluctance to leave this area is that we have vital churches, we have these cultural agencies, and if there was some degree of hope—greater degree of hope, let us say—that the young men and women could work here, that they could be here where they could get technical training for it as it may be more and more required. We need trained manpower. That is why this thing is vital to us, because we feel we need trained manpower. We want to give hope to potential manpower that we have in order to keep this manpower here.

But there is a strange kind of drawing power that is part of this area, and it is something more than just a native-son feeling. It is perhaps a product of the danger that unites the people in the mines. We live in a valley, we are encompassed there. Although there are weaknesses and a certain insularity, about being in a valley, we know that at the same time there is a certain pull there, too.

I do not know that I have answered it, but I do feel it would be solved a lot by this kind of a program.

Mr. SAYLOR. Reverend, in your research, did you determine or attempt to determine whether or not the people who are leaving are homeowners, or that those who stay are homeowners?

Reverend AYERS. No, sir; we did not explore that, but generally speaking, if a person goes from here to Jersey, the cost of things is up high in Jersey and he may not get so much for his property here. There is a tendency to not want to take too terrible a beating here for all the added costs that there might be living somewhere else.

That is quite a general statement, but that is the way I have found sometimes people around here feel.

Mr. SAYLOR. In other words, it is still home to the man and woman and family that own it.

Reverend AYERS. That is right.

Mr. SAYLOR. They do not want to give it up because they hope that temporarily, they do not have employment here.

Reverend AYERS. That is right.

Mr. SAYLOR. I want to thank your committee for what I think is a tremendous contribution.

That is all, Mr. Chairman.

Mr. EDMONDSON. Mr. Metcalf.

Mr. METCALF. Mr. Chairman, I have very little to add. I, too, want to compliment the committee for a very moving and eloquent picture of what happens to a community that is sick on the symptoms of a declining and deteriorating coal economy. I want to assure your committee and also our committee here that that happens in any mining area, whether it is anthracite coal, copper, tungsten, or any of these other minerals, when you have a sick community. You almost parallel a description I can give you of coal mines in my own area, and other almost ghost towns as a result of the deterioration and decline of important mineral industries.

I take it you do have adequate employment opportunities here for women. Is that correct?

Reverend AYERS. Yes.

Mr. LARSEN. Yes, that is correct.

Reverend AYERS. Yes, I would say that.

Mr. METCALF. Is that a result of the new industry you have brought in here, or replacement, or in what kind of work do women find employment?

Reverend AYERS. There will be other witnesses who can say more to that. We have textiles here. I do not feel confident to go into that very specifically.

Mr. METCALF. It is not always that in a community where there is widespread unemployment as a result of abandonment of a major industry that for the men who are unemployed, you can find some replacement so the family income can be kept up by the women finding employment.

Reverend AYERS. I tried to indicate, without saying too much about it, that we are working on that. We have to do something. We are not going to quit, and there have been, I will say, definite endeavors and some measure of modest success. But we have this escalator problem with our basic industry which nothing we say can counteract, but we still are seeking to have industry come in, attract industry where we can.

Mr. METCALF. Thank you, Mr. Chairman.

Mr. FLOOD. Mr. Chairman, may I interrupt there? I would just like to observe that the gentleman from Montana, Mr. Metcalf, may have a common interest with us. One of our very dear friends, and

a member of our local board here, was just elected to the Supreme Court of Pennsylvania. Of course, as you know, Mr. Metcalf was a former associate justice of the Supreme Court of Montana. We will try to draw an affinity if we can. And many of his miners came from our district a few years ago.

Mr. METCALF. I would say to the gentleman that the whole mining area of Montana is full of families that moved from this very area. They have gone in not only the coal mines, but also the hard rock mines in western Montana.

Mr. EDMONDSON. Judge Chenoweth.

Mr. CHENOWETH. Mr. Larsen, how long have you been in Wilkes-Barre?

Mr. LARSEN. Just 2 years.

Mr. CHENOWETH. I wanted to inquire when this decline started causing such stress as it is now.

Mr. LARSEN. The indication of the report and the researchers we called upon marked the greatest decline from 1940 to 1955, on the statistics we have.

Mr. CHENOWETH. Do I understand from this statement that up until 1948 you were operating in a normal way?

Mr. LARSEN. Generally speaking.

Mr. CHENOWETH. Without material unemployment, and your production was up to standards set in previous years?

Mr. LARSEN. Generally speaking, I think it was a satisfactory situation, but the real dip came after 1948.

Mr. CHENOWETH. I wanted to ask about this community of Hanover. I see you refer to it in your statement. Production is on the increase there, I believe; is that right?

Mr. LARSEN. The information that I have is that production has kept up, employment has kept up. The mines are good. They are located well.

Mr. CHENOWETH. Where is Hanover from here?

Mr. LARSEN. Hanover is south of the city of Wilkes-Barre.

Mr. CHENOWETH. How far?

Mr. LARSON. Just the next corporate——

Mr. FLOOD. May I interrupt there?

Mr. CHENOWETH. Certainly.

Mr. FLOOD. I want the record to show, and the committee to be clear, that in Pennsylvania there is a city called Hanover, which is in the area of York.

Mr. CHENOWETH. I am familiar with that.

Mr. FLOOD. This is Hanover Township, which is a township suburban to the city of Wilkes-Barre.

Mr. CHENOWETH. I appreciate that.

I wanted to ask Dr. Ayers if he is familiar with conditions in Hanover Township.

Reverend AYERS. To some extent.

Mr. CHENOWETH. And these same conditions you described here do not prevail in Hanover, because there they do not have the unemployment problem, production is up and everyone seems to be going along in good shape?

Reverend AYERS. I would say perhaps the conditions are relatively better.

Mr. CHENOWETH. What makes Hanover stand out above these other coal-mining communities? Why is production up there and down everywhere else?

Reverend AYERS. I think someone else will have to answer that.

Mr. CHENOWETH. I think that is all, Mr. Chairman.

Mr. EDMONDSON. Mr. Udall.

Mr. UDALL. Mr. Chairman, as usual, when my senior colleagues get through, the waterfront has been covered.

I do feel that has been an excellent presentation. As the father of five very young children who tries to spend most of his time, when not working at congressional business, at home, although he does not do a very good job, I have some insight into the importance of the presentation you made, Dr. Ayers, and I think it is very fine. That is all.

Mr. EDMONDSON. Mr. Aspinall has one further question.

Mr. ASPINALL. It is my understanding that most of the mines in this area are owned by individuals, many of whom are not residents of this area. In your work, Doctor, do you find an interest on their part to try to alleviate the difficulties that you have described, and also to try to find some new uses for the anthracite production so that your area can come back with its employment, or are they more or less not interested in your sociological and community problems?

Reverend AYERS. I would say that since this period of 1948—I have been here since 1944, and I have found a growing awareness in that regard. In fact, some of the people with these companies, the larger companies, have more than once expressed themselves, not only to me, but I think their attitude toward the United Fund—attitudes toward the people who work here has been, shall we say, more enlightened and more concerned. There has been a change in the climate of thought, it seems to me, Mr. Aspinall.

Just as there is more teamwork in this type of endeavor he is talking about, I think you are finding labor and management working increasingly together. I have been often almost amused to see the extent to which some of the people of some responsibility in the community seem to want to make sure that the Council of Churches and the other agencies are alert to what they have on their minds, and I think I have a little insight into the way in which the consciences of some of these men are working on these difficulties, and I know some of the decisions and some of this curtailment has perhaps contributed to ulcers or increased blood pressure as well.

And on the underlings who work with them on the management side, I have found a little less of the "what the hell" attitude, you might say, and a little bit different attitude, and I think that is a consequence of a good deal of these pressures we are talking about.

Mr. ASPINALL. That is all, Mr. Chairman.

Mr. SAYLOR. In other words, Doctor, the community is becoming socially conscious.

Reverend AYERS. I think we are all for Dan Flood. He is a God's messenger in many ways for us, because Dan would not be there if there were not a lot of people here who are behind the kind of things that are being done. It is not just he is down there as our messiah, but he is down there because we keep sending him there because he is

concerned to see some things done about these matters we are talking about.

Mr. EDMONDSON. With the unanimous consent of the other members of the committee, and with the assurance that a similar privilege will be afforded us in the sanctified hearings of the Appropriations Committee, we will yield to our colleague for any questions and observations he would like to make directed toward these witnesses.

Mr. FLOOD. Under no circumstances will I gild the lily.

Mr. EDMONDSON. Do you have any questions you would like to address to the witnesses?

Mr. FLOOD. No questions.

Mr. EDMONDSON. We thank you, gentlemen, and thank the committee for a very significant contribution to our hearing. We thank you very much.

Reverend AYERS. Thank you for giving us the opportunity.

Mr. LARSEN. Thank you, gentlemen.

Mr. EDMONDSON. Call the next witness.

Mr. FLOOD. Mr. Chairman, this community and the local people have gone to some pains to make it very clear in the State of Pennsylvania and in the entire hard-coal fields, this is not a Wilkes-Barre show, this is not a Luzerne County performance. It so happens that your committee has been gracious enough to sit here to examine the hard-coal problem. Luzerne County is only one county of a dozen counties in the hard-coal field. Wilkes-Barre happens to be geographically in the center, and I think that is why you are here. There are many great cities.

Mr. EDMONDSON. What is the total population of Luzerne County?

Mr. FLOOD. Luzerne County is over 400,000. The entire hard-coal fields will be considerably over a million. So this is merely 1 county of a dozen and 1 city of 20 or 30. There are other great cities and other great communities. There are other great chambers of commerce and united industrial groups who have all indicated their desire to be here. Two or three we asked to come especially because of their proximity and renowned experience. But I go to great pains, and repeat for the purpose of emphasis, that you are not to think this is an isolated situation only in my district and my city. These men are speaking pretty generally of the situation as it exists in the entire hard-coal area.

So, Mr. Chairman, the next witness is a representative of the Scranton Chamber of Commerce. Mr. Willis Jones, the executive secretary, had indicated he would be here, but they are doing a great industrial development job, and he has a prospect for a new factory in a trap, I understand, at Scranton, and he sends a very able, eloquent spokesman in Mr. Joseph McGowan.

Mr. EDMONDSON. Mr. McGowan, we are pleased to have you here and to hear from you.

STATEMENT OF JOSEPH McGOWAN, SCRANTON CHAMBER OF COMMERCE, SCRANTON, PA.

Mr. MCGOWAN. Thank you.

Mr. Chairman, and members of your committee, Congressman Flood, and gentlemen, it is a pleasure to be here to pinchhit for Willis Jones. First of all, I want to echo the thanks of the gentlemen who

went before me in thanking you men in giving this the personal and, I am sure, sincere attention you are giving our problem here in the anthracite field.

I do not have any report filed with you. I do have some notes here I would like to follow in making my comments, so that I will get the message that I want to get over to you.

Mr. FLOOD. May I interrupt, Mr. Chairman?

I am sure that the witnesses for the other communities, or any witnesses who wish to supplement or make additional statements or original statements, may be permitted to file such reports or statements.

Mr. EDMONDSON. Yes.

Mr. MCGOWAN. If I may, I would appreciate very much being permitted to do that.

Mr. EDMONDSON. I would suggest you have a copy of the Wilkes-Barre community report, and I am sure your able organization could present for the committee something of that nature for your area.

Mr. MCGOWAN. All right, sir. We will do that.

First of all, I would like to endorse, speaking for my chamber of commerce, everything that those men from Wilkes-Barre have said to you. I hope that you have been as highly impressed with their remarks as I have, and I think you have.

Next, I would like to point out that Scranton used to be the anthracite capital of the world, which we were very proud of, but we have had to relinquish the laurels to Wilkes-Barre; so that Wilkes-Barre stands higher as an anthracite-producing community and, I believe, has a greater anthracite potential than we do. So my remarks are going to be a little different than the ones that have gone before me.

In Scranton and in Lackawanna County, as in this entire area, we have a rehabilitation job to do. In my community, we are trying to do it with the accent on industrial development. So I would like to talk pretty much along those lines.

As you know, in the industrial development field there are several requirements. Naturally, plant sites are one, an adequate and an able labor supply is another. Transportation facilities have become increasingly important—rail and highway. As industry has begun decentralizing—before they got into that, when centered in towns like Detroit and other towns of that nature, the transportation facilities needed were developed. They were there.

But now that industry has tried to take all of its eggs out of a couple of baskets and put them in a lot of baskets, it does not naturally follow that wherever they would like to go they are going to find adequate transportation facilities.

Well, here in this area we have them, thank goodness. We have good transportation facilities. I do not think you can find any better. Naturally, we are not as big as the metropolitan areas of New York, Philadelphia, Baltimore, Detroit, or Chicago, but compared with the average community in the country, I think maybe we are a little bit better.

We have labor. We have a lot of it. I will admit it is the anthracite brand, but it is all adaptable, and it is all willing, and given the chance, it is all productive, which you do not find in every part of the country.

However, there were other factors in trying to attract industry into our anthracite area and ranked high is this matter of an attrac-

tive community, and right there we need a little bit of help. I think we need a lot, because the great mining industry over the years—naturally, they were not able to mine nothing but the coal, there had to be a lot of refuse, and they had to have a place to put it. So as a result, what we call culm piles grew and grew and grew. Some of them looked like miniature mountains.

In our quest for industry, while we have a lot of advantages, as I pointed out, unfortunately these culm piles do not work to our advantage. In fact, they put us at a dual disadvantage.

Number one, it may be surprising to you—I know it was to me when it was pointed out to me—they presently occupy about 20 to 25 percent of our available industrial land. Now that is a big item in itself because this is not Kansas or any other place that has flat country to brag about or complain about. We have a lot of mountains around here, too, gentlemen, as you can well see.

In today's industrial picture, demand is for one-story factories. Everybody wants to be on the ground floor. So that in putting up a lot of one-story factories, we have a problem here in coping with the natural terrain. So that we cannot afford to give 20 to 25 percent of our flat land away.

No. 2, the appearance of them has made a lot of industrial prospects a little bit reluctant to move in, and that is becoming increasingly important because we have gotten into an era of the importance of engineering and engineers. It is a lot harder for an industry to bring engineering personnel into any community than it is just manufacturing personnel. I say that with all due respect to manufacturing personnel. But I have been in industry for 5 years, and part of my responsibilities were to try to get engineers to come with my company. Believe me, it is not easy to sell them when they get the impression—first impressions here, just as in any other area, are important, and I have seen numerous instances in which not so much the man—bring an engineer in here to try to get him to go to work in your plant. We usually have nice shiny new plants to show him, and that is where he is going to spend most of his waking hours, so he was not too hard to deal with. But as soon as his wife would come in and see our culm piles, she would throw up her hands, and in a lot of instances we just did not get them.

That is just one part of industry's problem—recruiting problem—but, as you know, it is becoming an increasingly big and important one.

So our request from the Scranton Chamber of Commerce is that in addition to doing everything Wilkes-Barre asks that you will do—and I hope you will do it. We certainly back them up in everything they say. But we would also like to ask that you consider a research program pointed at those piles of refuse. Maybe there is something in there that would sell, and some money spent on research in that line, I hope, and would like to think, would pay off. Because if we can find a way to dispose of those piles, to get them out of there at a profit, we will have done two things that we need very badly:

No. 1, we will have furthered the interest of the anthracite area in general, profitably.

No. 2, we will have unshackled ourselves from the disadvantage that those culm piles impose upon us right now and it will open the

gates for us to try to go further and further in our efforts to develop our area industrially as well as in mining.

That is all I have to say as a statement, gentlemen. If you have any questions, I will try to answer them.

Mr. EDMONDSON. Thank you, Mr. McGowan.

Mr. Aspinall, do you have any questions?

Mr. ASPINALL. I have but one question, Mr. McGowan. Do I understand from your testimony that the area which you represent has decided that no longer do they need to look to the anthracite coal industry for their economy? And, if so, is it because your reserves have been pretty well taken care of and your mines have watered up and cannot be reopened? Or is it because you are looking toward more attractive industries?

Mr. MCGOWAN. Gentlemen, we do not wish to turn our backs on the mining industry. Far from it. We do want to keep it alive and healthy, but we cannot depend strictly upon it.

Mr. ASPINALL. May I ask the question this way?

Mr. MCGOWAN. Yes, sir.

Mr. ASPINALL. If the anthracite coal business should brighten, would your area go back to the production of anthracite coal to any appreciable degree?

Mr. MCGOWAN. Yes, we would. In addition to the manufacturing we are attempting to and have, to a fair degree, successfully developed, at the moment, according to our figures, in the mining industry in our county we have about about 3,600 people actively employed. I mean, in our Scranton area. Mr. Earnest and Mr. Crosby from the Anthracite Foundation can, I am sure, give you much more illuminating information on that than I can. But in our particular area, while we have 3,600 there, in several lines of manufacturing we have more than that.

Mr. ASPINALL. I have one more question. What has your chamber of commerce done relative to trying to find values in your culm piles, as you call them? I think we call them slack piles, and so forth, at home. You are not the only one that has them. Have you done anything?

Mr. MCGOWAN. No, sir; we do not have that kind of money, sir.

Mr. EDMONDSON. Mr. Saylor.

Mr. SAYLOR. Mr. McGowan, do you know whether or not there has been any use made of your so-called culm piles, or bony piles?

Mr. MCGOWAN. Again, if I may, sir, I would ask that you direct those questions to the gentlemen from the Anthracite Institute.

Mr. SAYLOR. Would you be in a position to say——

Mr. MCGOWAN. Excuse me. I know they have tried making cinder blocks out of them, and, in some instances, with a fair degree of success. But the fact remains that most of them are still there, and some of them are burning. There is no use trying to sell those.

Mr. SAYLOR. Mr. McGowan, would you be in a position to state that the diversification of industry has been so great in Scranton that no longer is Scranton solely dependent upon the anthracite for employment and maintenance of their general economy?

Mr. MCGOWAN. No, I could not say that, sir, because at present we have 11,300 people unemployed in our area.

I have with me a copy of the Scranton Labor Market Letter which was released yesterday. If I may, sir, I would like to leave it with

you, and attach another copy of it with the written comments I can send to you later.

It goes on to say:

Unemployment increases.—Area remains in group E. As a result of the substantial reduction in area employment during the last 2 months, the number of persons unemployed increased from an estimated 9,700 in November to 11,300 in January, a rise of 16.5 percent. Unemployment includes 3,600 women as compared with 2,850 2 months ago. The total number of persons now out of work comprises 11.1 percent of the area's civilian labor force available.

So we certainly could and would welcome renewed activity in the mines, because do not forget, gentlemen, we have a lot of men in our area who unfortunately cannot qualify for jobs in industry because they are absolutely without skills. They were excellent miners. They did not come any better. But it does not qualify them to run a lathe or a drill press or any other of the many machines in industry. So that we very definitely would benefit from renewed activity as a result of successful research or any other factor that would contribute to a rebirth of mining in our area.

Mr. SAYLOR. That is all, Mr. Chairman.

Mr. EDMONDSON. Would you like to submit that report for the record, sir?

Mr. MCGOWAN. Yes, sir. That also gives you a breakdown on manufacturing alone.

Mr. EDMONDSON. I notice it also gives us the employment, earnings, and working time in manufacturing industries in your market.

Mr. MCGOWAN. Yes.

Mr. EDMONDSON. Do you care to make that report of record at this point?

Mr. MCGOWAN. I would be glad to.

Mr. FLOOD. I would like to point out, Mr. Chairman, that this Labor Market Letter does not deal just with the city of Scranton. In effect, it is Lackawanna County.

Mr. MCGOWAN. That is right.

Mr. ASPINALL. Reserving the right to object, and I shall not object, but I do not like to see any duplication in the record with the statement that is finally submitted to the committee. With the understanding that there will not be any duplication, I would not object to it being accepted at this time, and received as such, and if the statement later on does include this material, then have this placed in the file rather than in the record.

Mr. EDMONDSON. Without objection, that is so ordered.

(The letter follows:)

LABOR MARKET LETTER, SCRANTON AREA

A MONTHLY REVIEW OF CURRENT EMPLOYMENT DEVELOPMENTS AND PROSPECTS

(Volume XII, No. 1, January 1957, released February 21, 1957)

DECLINE OF 1.6 PERCENT IN AREA EMPLOYMENT

Scranton area employment showed the reducing effects of normal year-end factors between November and January at Lackawanna County employers lowered their work forces by some 1,450 persons. While trade establishments and construction followed normal declining patterns for this time of year, layoffs in other industries, particularly in lumber products and furniture, apparel manufacturing, and electrical machinery, carried beyond the normal year-end slack

period. Lack of orders appears the most commonly cited reason for the employment reduction. As a result, area employment receded from a revised November 15 estimate of 91,950 persons to 90,500 on January 15, a reduction of 1.6 percent. Despite the sharp drop in employment since November total employment in the area remains slightly above the aggregate of 90,350 employed persons in January 1956.

Average hourly earnings in local manufacturing industries remained constant at $1.58 between November 1956 and January 1957, but average weekly earnings declined from $62.57 in November to $61.30 in January as a result of a reduction in weekly hours worked from 39.6 to 38.8 during these months.

UNEMPLOYMENT INCREASES: AREA REMAINS IN GROUP E

As a result of the substantial reduction in area employment during the past 2 months, the number of persons unemployed increased from an estimated 9,700 in November to 11,300 in January, a rise of 16.5 percent. Current unemployment includes 3,600 women as compared with 2,850 two months ago. The total number of persons now out of work comprises 11.1 percent of the area's civilian labor force available. In November unemployment constituted 9.5 percent of the area's labor force. The Scranton labor market area (Lackawanna County) carried a January labor supply classification in group E, unchanged from the November 1956 grouping. In January 1956 an estimated 13,250 persons were unemployed, constituting 12.8 percent of the labor force. The area at that time was classified in group F.

SLIBCO PLANS ADDITIONAL CONSTRUCTION FOR LOCAL FIRM

The Scranton Lackawanna Industrial Building Company (SLIBCO) has announced that it will begin immediate construction of a 23,000-square-foot addition to the Trane Co. plant in the Moosic section of the area. The proposed addition to the plant will increase its floor space to approximately 168,000 square feet. The addition is expected to result in 50 to 60 new jobs at the Trane plant, and will mark the sixth expansion since the firm moved into the area from Wisconsin. The local plant produces air-conditioning units for hotels and office buildings, convector heating units, baseboard radiators, and wall-fin radiation units for industrial use.

STANLEY A. SIMRELL,
Manager, Bureau of Employment Security,
Pennsylvania State Employment Service.

Employment, earnings, and working time in manufacturing industries [1]—Scranton labor market area,[2] January 1957

	Employment			Average weekly earnings			Average hourly earnings			Average weekly hours worked		
	January 1957	Month ago	Year ago	January 1957	Month ago	Year ago	January 1957	Month ago	Year ago	January 1957	Month ago	Year ago
All manufacturing	31,750	32,050	31,600	$61.30	$62.25	$57.26	$1.58	$1.58	$1.47	38.8	39.4	38.9
Food	1,200	1,200	1,250	75.95	68.51	71.15	1.75	1.73	1.70	43.4	39.6	41.9
Textiles	4,000	4,000	4,150	53.36	57.60	52.49	1.45	1.44	1.37	36.8	40.0	38.4
Apparel	10,100	10,400	10,450	47.60	46.46	42.86	1.29	1.28	1.15	36.9	36.3	37.3
Paper and printing	3,200	3,150	2,800	78.78	82.01	77.79	2.02	2.02	1.94	39.0	40.6	40.1
Leather	1,000	1,000	1,100	50.96	48.62	46.96	1.31	1.30	1.18	38.9	37.4	39.8
Metals and metal products	1,950	1,950	1,800	80.59	81.99	76.93	1.98	1.99	1.91	40.7	41.2	40.3
Machinery and transportation equipment	2,850	2,900	3,150	78.08	73.74	73.17	1.82	1.78	1.66	42.9	41.3	44.0
Other manufacturing industries	7,450	7,450	6,900	71.17	71.28	65.55	1.74	1.76	1.72	40.9	40.5	38.2

[1] Employment includes production and nonproduction workers. Average earnings and hours cover only production workers.
[2] County included: Lackawanna.

NOTE.—Figures for current month are preliminary.
Source: Prepared in cooperation with the U. S. Bureau of Labor Statistics.

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Mr. EDMONDSON. Mr. Metcalf, do you have any questions?

Mr. METCALF. I have no further questions, except to thank the witness for bringing to us another phase of this necessary research program that had not come to my attention before—the fact that not only do we have to go into uses for anthracite and bituminous coal in developing other markets, but we also have to take care of these byproducts and tailings that have accumulated so your cities can turn to other industries.

Thank you for bring that to our attention.

Mr. MCGOWAN. In addition to mining.

Mr. CHENOWETH. You mentioned that Scranton was formerly the anthracite capital.

Mr. MCGOWAN. We used to claim we were.

Mr. CHENOWETH. How does it come you had to yield that honor to Wilkes-Barre?

Mr. MCGOWAN. We are outnumbered.

Mr. CHENOWETH. Did you formerly have more anthracite miners in Scranton than in Wilkes-Barre?

Mr. MCGOWAN. May I look to you, Mr. Earnest or Mr. Crosby? I do not believe so.

Mr. EARNEST. It is a matter of reserves.

Mr. MCGOWAN. Lackawanna County, gentlemen, originally was part of Luzerne County.

Mr. CHENOWETH. When did this decline in anthracite take place in Scranton when you had to begin to look for new industries?

Mr. MCGOWAN. I can remember it beginning back in 1948.

Mr. CHENOWETH. How long have you held your present position?

Mr. MCGOWAN. I am a little hesitant to answer that question. It is going to bring a laugh, I believe. Since January 1.

Mr. CHENOWETH. How long have you lived in Scranton?

Mr. MCGOWAN. With the exception of last year, all my life. Last year I was one of those people that Dr. Ayers mentioned as working out of the area. I worked in Connecticut all last year, gentlemen, and commuted 52 weekends because I did not want to leave here. Thank God I was successful in coming back to the kind of work that I wanted.

Mr. CHENOWETH. Is there a feeling of optimism in Scranton as to the anthracite industry coming back? These 11,000 unemployed. How many of those are miners?

Mr. MCGOWAN. I do not know. We would like to be optimistic, but we have to be realistic, too. We hope it will, but in the meantime we are trying to attract as much industry as we can so that if and when it does we will have both of them.

Mr. CHENOWETH. As I understand it, you have the coal left there. There is just no demand for it, and that is why you are not working the mines. Is that correct? You have not run out of coal yet?

Mr. MCGOWAN. No, we have not.

Mr. CHENOWETH. You have plenty of coal?

Mr. MCGOWAN. Yes.

Mr. CHENOWETH. And the mines are ready to operate if a demand for the coal is revived?

Mr. MCGOWAN. Yes, sir, if the demand is revived.

Mr. CHENOWETH. That is your problem?

Mr. MCGOWAN. Yes.

Mr. CHENOWETH. But you are seeking to replace that economy with the industrial development?

Mr. MCGOWAN. That is right.

Mr. CHENOWETH. Are you having much success in that?

Mr. MCGOWAN. Yes, we have. If I may, I would like to leave a piece of literature with your committee which documents the success that we have had. Of course, it is a sales piece, but you can accept it in its entirety.

Scranton, this area, was probably the first area in the country to realize the importance of community action to try to get new industry, attract industry. Ten years ago we began putting in community-financed plants, building them, and then trying to rent them. We have two for rent right now in Scranton, brand new ones, 70,000 square feet in each one, that we are trying to lease to industry.

All together we have attracted about 60 companies, industries and firms to our area.

We had 20,000 unemployed not too many years ago, and, although a lot of them have left the area, I think we have done a pretty good job of providing manufacturing jobs.

For instance, a new industry in our area is the electronic industry. We have, according to our records, 5,800 people working in the electronic manufacturing.

We have attracted such nationally prominent firms as the Trane Co. The Trane Co., as you probably know, makes radiation and air-conditioning equipment. I believe they are the leaders in their field in the country. They have three manufacturing points so far: Their home base of La Crosse, Wis., a Canadian base in Toronto, and the eastern part of United States is supplied and serviced out of Scranton.

Of course, General Electric has plants all over the country, so I cannot take any particular credit for bringing them in.

We have done a good job here, and this [indicating] tells the story without too much trying to be a salesman. I would like to leave it with you.

Mr. EDMONDSON. We would be very pleased to accept it, without objection, to be made a part of the committee file.

Mr. MCGOWAN. All right, sir.

(The document will be found in the files of the committee.)

Mr. CHENOWETH. When did this drive for new industry start in Scranton?

Mr. MCGOWAN. Right after the war.

Mr. CHENOWETH. It looks like you have been very successful.

Mr. MCGOWAN. It has; thank God. We have a long way to go.

Mr. FLOOD. You mean World War II, of course?

Mr. MCGOWAN. Yes. I am sorry.

Mr. CHENOWETH. I think that is all, Mr. Chairman.

Mr. EDMONDSON. Mr. Udall.

Mr. UDALL. No questions.

Mr. FLOOD. Mr. Chairman, may I request at this point of the record, in view of the fact that the witness who has just left the chair is from Scranton and Scranton is the county seat of Lackawanna County, and Lackawanna County is one of the counties in the congressional district of our colleague, Mr. Carrigg, that following the testimony of this witness, if he so desires, he may be permitted to submit a statement for the record?

Mr. EDMONDSON. Without objection, that is so ordered.

Mr. FLOOD. Mr. Chairman, one of the great counties in the anthracite coal field is the county of Schuylkill, in the congressional district of our colleague, Dr. Fenton. Schuylkill County, like Luzerne County, is really a hard-coal county where beyond a question of intelligent debate hard coal is the basic and chief industry and always has been. For that reason arrangements had been made to take the testimony of Mr. Edward A. Lynch, president of the Pottsville industrial fund, where they have been doing much of what we have been doing here and in Scranton on industrial development. Mr. Lynch was unavoidably detained. However, he has sent to the Wilkes-Barre Chamber of Commerce, and Mr. Crosby is prepared to submit for the record—I am advised there will be no need to read it at this time—Mr. Crosby will submit for the record the statement of Edward A. Lynch, of the Pottsville industrial fund, relating to the Schuylkill County areas.

Mr. EDMONDSON. Without objection, the statement will be made a part of the record at this point.

(The statement follows:)

GREATER POTTSVILLE INDUSTRIAL DEVELOPMENT CORP,
Pottsville, Pa., February 20, 1957.

Mr. J. M. CROSBY,
Chamber of of Commerce, Wilkes-Barre, Pa.

DEAR MR. CROSBY: I wish to inform you that I have examined the presentation your organization will make before the subcommittee of the House Committee on Insular and Interior Affairs on February 22, and endorse it fully.

While our organization is engaged in an industrial development and diversification program, we feel there is a great need for a maximum program of research into new uses for anthracite coal.

Benefits which might accrue from such a program will not only accrue to the anthracite industry directly but the entire anthracite area economy.

We here in the southern field are particularly anxious to see a full-scale program of research into the utilization of anthracite fines (silt) in the hope that such a program might develop industrial utilization of such fines. This would attract new industry which then would be eager to locate close to the source of supply. More than 80 percent of all existing fines are above ground in the southern field.

Respectfully yours,

EDWARD A. LYNCH, *President.*

Mr. SAYLOR. Mr. Chairman, may I ask at this point that our colleague, Dr. Fenton, who represents that area, be permitted to file a statement for the record immediately following the statement of Mr. Lynch?

Mr. FLOOD. I was just about to make that same request.

Mr. EDMONDSON. Without objection, that permission is also granted.

Mr. FLOOD. Mr. Chairman, at this point in the record, there is another great coal area from another congressional district, that of Carbon County. Carbon County is in the congressional district of our colleague, Mr. Walter, and, if there is no objection, Mr. Chairman, I would suggest that at this point in the record, if he so desires, Mr. Walter be permitted to insert a statement as the Representative of that congressional district dealing with this same problem.

Mr. EDMONDSON. Without objection, permission is granted.

Mr. FLOOD. Mr. Chairman, the next witness is Mr. William O. Sword, president of the Greater Wilkes-Barre industrial fund and chairman of the board of the Greater Wilkes-Barre Chamber of Commerce. Mr. Sword's name has become a household word—favorably

I hasten to add—in our entire area. He has practically a fabulous character, because, if you ever heard of do-gooders, this is a do-gooder in spades.

I am sorry to add—you will not mind, Mr. Chairman—I am sorry to add he makes his living out of oil. God save the mark.

But he has expended himself and expended his time and his physical well-being and his own money as a dedicated leader, and he has no equal in our area in the capacity of being a civic leader in public good and trying to solve the problem we are all attacking. Mr. William O. Sword.

Mr. EDMONDSON. Mr. Sword, we are very pleased to have you as a witness here today. Some of our oil people say that the oil industry owes a lot to coal because it did not really start working on modernizing and getting up to date until it ran into the competition of oil and gas.

Mr. SWORD. I think I can testify to that.

Mr. EDMONDSON. We will be very pleased to hear you for about 10 minutes, and then if that does not complete your statement or we do not have an opportunity to question you in that period, we will ask you to come back after the noon recess.

STATEMENT OF WILLIAM O. SWORD, PRESIDENT, GREATER WILKES-BARRE INDUSTRIAL FUND, AND CHAIRMAN OF THE BOARD, GREATER WILKES-BARRE CHAMBER OF COMMERCE

Mr. SWORD. I will be happy to, Mr. Chairman. I think my statement can be condensed very quickly and to an agreement with the previous witnesses. I want to assure you that it is very seldom that we are in agreement with Scranton but in this particular case we are heartily in accord with Mr. McGowan's testimony.

I think my testimony here should be to the effect that it is the community's belief that our well-being depends on the anthracite-mining industry.

As Scranton has done, we have made some attempt at the diversification of our industry, but our anthracite coal is basic to the well-being of the community. We believe that if there is anything that can be done by the Federal Government and the State government in helping us to find other uses or further extension of the use of anthracite coal, it is a vital factor in our economy.

The previous witnesses have testified to the very serious effect which we have felt here in the community as the result of the loss of jobs in payroll dollars to our economy. Back in 1950, taking a lesson from our sister city of Scranton, we then attempted to begin to diversify and to try to attract new industry into the area. We have been partly successful in doing that, but at each step where we acquire a new industry to take up some of the load, unfortunately our anthracite payroll decreases. So that, as Reverend Ayres so aptly described, we are not making much headway up to the top of the escalator. We are just about standing still.

The anthracite payroll, to the best of my knowledge, comprises the major part of our payroll dollars and is a very vital factor in our economy. It is the sincere belief of those of us who have taken part in some of these civic enterprises that the rejuvenation and the ex-

tension of the anthracite industry is certainly the most vital thing we have to face right now, and we firmly believe that it is the province of the Federal Government to give us, a very old and populous section of the country, every possible help that can be given to this rejuvenation of the anthracite industry.

Mr. EDMONDSON. Thank you, Mr. Sword, for a fine statement.

Mr. Aspinall, do you have some questions?

Mr. ASPINALL. I have 1 or 2 questions.

Perhaps, Mr. Sword, you can answer the question that I originally directed to Mr. Larsen. Do you know approximately what percentage of your economy depends presently upon the anthracite-coal-mining industry?

Mr. SWORD. Again, like Mr. Larsen, for an authoritative statement I would like to refer to Mr. Earnest. But it is my belief that the anthracite payroll represents somewhere between 40 and 50 percent of our total payroll dollars.

Mr. ASPINALL. Mr. Earnest will have that statement?

Mr. SWORD. I hope.

Mr. ASPINALL. One other question. Am I correct in assuming that there are more anthracite-coal reserves in what is known as the Wilkes-Barre area for the future development than remain in the Scranton area?

Mr. SWORD. I think that is a matter of common knowledge, Mr. Aspinall.

Mr. ASPINALL. That is all.

Mr. EDMONDSON. Mr. Saylor.

Mr. SAYLOR. Mr. Sword, I would like to congratulate you on your statement, and say to you only an oilman would have enough money to find any time to help out the coal industry. [Laughter.] I want to commend you for the work which you are doing, and I can tell you very frankly that your name is not only known locally but throughout the length and breadth of this Commonwealth. People know of you and the work you have done here in this community.

Mr. SWORD. Thank you, sir.

Mr. SAYLOR. I can say to you that many communities are envious of Wilkes-Barre in having you to head up their movement.

Mr. SWORD. Thank you.

Mr. SAYLOR. Do you feel if a research program is started that it will tend to keep the men who are leaving this community and not participating in the coalfields to remain here?

Mr. SWORD. I certainly do. Someone else has expressed it better than I can, but I believe if our younger men and the people here in the community had confidence that once again the anthracite industry had a chance to exist, they would feel that it was an industry in which they could begin to work. I think it is a basic community feeling that the time spent in learning to become a miner or in getting a job that in their opinion is a little insecure is a good deal of our problem.

Mr. SAYLOR. Mr. Sword, do you know whether or not most of the men who are engaged or who have been engaged in the mining industry in this area own their own homes?

Mr. SWORD. We are known as a community of great homeownership. Possibly some of my staff here might be able to give that figure. But I believe it is as high as 40 percent, which is indicative, I am sure, of a percent far above national average.

Mr. SAYLOR. Yes. Thank you. That is all.

Mr. EDMONDSON. Mr. Sword, we cannot invite you back for any $64,000 question at the next session, but we would like for you to come back, if you would, after the noon recess because I think some of the other members of the committee will have questions for you.

Mr. SWORD. I would be happy to.

Mr. EDMONDSON. So the committee will stand in recess until 1:45.

(Whereupon, at 12:15 p. m., the subcommittee recessed, to reconvene at 1:45 p. m. this same day.)

AFTERNOON SESSION

Mr. EDMONDSON. The Subcommittee on Coal Research will be in session.

Mr. FLOOD. At the time we adjourned, Mr. Chairman, for luncheon, Mr. William O. Sword, president of the Greater Wilkes-Barre Industrial Fund and chairman of the board of directors of the Greater Wilkes-Barre Chamber of Commerce, had made a statement and was under interrogation by this committee. Mr. Sword, will you please take the chair.

STATEMENT OF WILLIAM O. SWORD, PRESIDENT, GREATER WILKES-BARRE INDUSTRIAL FUND, AND CHAIRMAN OF THE BOARD, GREATER WILKES-BARRE CHAMBER OF COMMERCE—Resumed

Mr. EDMONDSON. Mr. Metcalf, do you have any questions?

Mr. METCALF. I have no questions.

Mr. EDMONDSON. Mr. Chenoweth.

Mr. CHENOWETH. I think I have no questions.

Mr. EDMONDSON. Mr. Udall.

Mr. UDALL. There are 2 or 3 things I wanted to inquire about.

With regard to the efforts that you have made in recent years in bringing in new industry, are any special efforts being made to bring in industries which, due to their own energy requirements or for other reasons, would gear their efforts in with the anthracite coal industry?

Mr. SWORD. No; Mr. Udall, we have not. We have brought in Foster-Wheeler, who are high pressure boiler people, and that sort of stuff, but not primarily because of any connection with anthracite.

Mr. UDALL. I understand from members of the committee who were at the hearing in southern Virginia, for instance, there was a new effort being made there to generate electrical energy by steam plants in which the main source of energy is coal. Do you have anything similar to that that has come in recently?

Mr. SWORD. No; we do not. I think I would like to say that I believe if such a research program were developed, particularly out of the allied things that might come out of such a research program, I believe venture capital might be interested in coming in and establishing, or possibly some of our own industry——

Mr. ASPINALL. Will the gentleman yield?

Mr. UDALL. Yes.

Mr. ASPINALL. Do you know, Mr. Sword, whether or not anthracite coal lends itself to being used in the production of electricity?

Mr. SWORD. I think I would rather refer that to someone more expert than myself.

Mr. ASPINALL. Thank you.

Mr. UDALL. I think that is all I have.

Mr. SWORD. One other thing, Mr. Edmondson, if I may. I would like to correct the statement I made earlier in which I said that we had about 40 percent of home ownership here. My able staff have corrected me, and it is over 60 percent of home ownership here.

Mr. EDMONDSON. Mr. Sword, you do have the feeling—I am convinced from what you said already—that the business development and the industrial development of this area do fit into and depend to a considerable extent upon the future of the anthracite coal industry, do you not?

Mr. SWORD. I believe I have tried to make myself very clear on that: that I believe our basic economy must be the anthracite industry. We cannot bring in industry fast enough or able enough to counteract the losses which we have sustained in the anthracite payroll.

I think I could illustrate it best by saying that, to the best of my belief, about 5 years ago the anthracite payroll was in the neighborhood of a hundred million dollars. Today it is less than 50 million. Trying to overcome that gap is a tremendous, almost impossible situation.

While our people here, as I assume most of the committee members know, have raised almost $2 million of free gifts to the industrial fund—that is not bonds or debentures or anything of that sort, but actual free gifts—which have made it possible for us to bring in what industry we have been able to bring in, we have been trying our utmost to raise ourselves by our own bootstraps, and at this point we hope that the Federal Government will try to correct some of the ills of the anthracite industry, our basic industry.

Mr. EDMONDSON. Do you feel that a maximum local effort within the community itself and within the industry has been made to meet this problem, sir?

Mr. SWORD. I do believe that. I think we have demonstrated that the community is trying desperately to rehabilitate itself by the mere fact of the moneys which have been raised in that field.

Mr. EDMONDSON. We have heard something of your industrial park plan in this area. Could you tell us a little bit about that and if there is a role for anthracite coal in that plan?

Mr. SWORD. Did I understand you to say the industrial-park plan?

Mr. EDMONDSON. As I understood it, it was the industrial-park plan.

Mr. SWORD. As many progressive communities throughout the United States establish on the outskirts of the city an area which is devoted exclusively to industrial plants, we in Wilkes-Barre did that and were among the very early ones to have done it. We acquired an area of 1,500 acres, and at great expense to our utilities and to the railroads we developed the necessary facilities that manufacturing plants need—water, power—our country has built a road through the park, and there we have established three large new industries; the first being Foster-Wheeler, the other King Fifth Wheel, and quite recently the Eberhard-Faber Pencil Co.

We still have many acres in the park which we have available to prospective industry.

Mr. EDMONDSON. Of those three substantial new industries, which ones are users of anthracite coal now?

Mr. SWORD. Two. Eberhard-Faber are using anthracite and King Fifth Wheel are using anthracite. Foster-Wheeler, being primarily oil people, are using oil.

Mr. EDMONDSON. Are there any other questions from the committee?

Thank you very much, Mr. Sword.

Mr. SWORD. Thank you.

Mr. FLOOD. Mr. Chairman, that, generally speaking, terminates what we would call the sociological-economic aspect of the hard-coal presentation. We will now present a group of witnesses who are more closely identified with the industry itself in various capacities and whose testimony will be more specific and more technical with the direct purpose of the committee.

The first witness is Hon. Joseph T. Kennedy, who is secretary of mines and mineral industries for the Commonwealth of Pennsylvania.

Mr. Kennedy is a coal miner himself. In his early days, about a "hundred years" ago, he actually worked at the face. He touched home. He is not—with no aspersions intended, he is not a long-haired academician in an ivory tower; he is an old coal miner in his own right and has risen to this high position of secretary of mines in our State. He is a native of and still resides in the city of Wilkes-Barre. Mr. Kennedy.

STATEMENT OF HON. JOSEPH T. KENNEDY, SECRETARY OF MINES AND MINERAL INDUSTRIES OF THE COMMONWEALTH OF PENNSYLVANIA, HARRISBURG, PA.; ACCOMPANIED BY RALPH LAMBERT, CHIEF MINING ENGINEER, DEPARTMENT OF MINES AND MINERAL INDUSTRIES

Mr. KENNEDY. Mr. Chairman and gentlemen, my name is Joseph T. Kennedy. I am one of Congressman Flood's peasants, a practical coal miner, a resident of Pennsylvania, and the secretary of mines and mineral industries of the Commonwealth of Pennsylvania.

I am accompanied by Mr. Ralph Lambert, our chief mining engineer. Mr. Lambert is not only a registered professional mining engineer—before he became associated with us he was president of the Pennsylvania Coal Co., which had extensive holdings in not only the anthracite industry but also in the bituminous industry in Pennsylvania.

It is an honor and a privilege to appear before your distinguished group for the purpose of telling why I am strongly in favor of expanded research in matters pertaining to coal.

The Pennsylvania Department of Mines and Mineral Industries is charged with the duty of enforcing the State laws pertaining to the coal mines in the Commonwealth. Pennsylvania has vast deposits of bituminous coal, and contains nearly all the anthracite deposits in the United States.

Anthracite occurs in 11 counties in the northeastern portion of the State; bituminous coal occurs in 33 counties in the central and western part of the State. In other words, coal deposits exist in 44 of the 67 counties in the Commonwealth.

Approximately 5 billion tons of anthracite and 8 billion tons of bituminous coal have been produced in Pennsylvania to this time. It is estimated that 5 billion tons of anthracite and 30 billion tons of bituminous coal remain to be produced.

The importance of coal to the economy of our Commonwealth in the past, present, and future can readily be seen by the wide distribution and size of deposits as outlined above.

Our bituminous coal is marketed principally to the steel industry, the utilities, and, at present, to export trade. The railroads formerly provided a substantial outlet. This has been lost due to the introduction of diesel motive power.

Anthracite has always been used primarily for space heating, particularly domestic heating. Its smokeless burning and draft adaptability qualities have made it preferable for this use, especially in metropolitan areas. It has lost a vast share of its former outlet to competitive heating by oil and gas.

Brisk demand for Pennsylvania's anthracite and bituminous coal occurs during times of national emergency. Bituminous demand depends largely on requirements of the steel industry and utilities. I believe research may find uses for our coals that can, in effect, make other industries depend on coal, rather than have coal depend on other industries. I am heartily in favor of such research.

I understand you gentlemen have visited the bituminous coal areas of the State. I will, therefore, discuss more particularly the anthracite area, and the present coal research board which has been set up in our department.

As I mentioned earlier, anthracite has always been used primarily for space heating, and particularly for the heating of homes. Its burning qualities make it desirable for use in heavily populated areas, and its geographic occurrence near the metropolitan areas of the eastern seaboard of our country provided it with a market almost monopolistic in nature up to about 1925. At that time fuel oil was in large supply due to a proportionately greater demand for the lighter byproducts of petroleum, and the oil industry began successfully to replace anthracite for home heating to a large degree.

The producers of anthracite were unable to find new markets for their product as it was displaced by fuel oil. The result was a drop in production of anthracite from a peak of 100 million tons in 1917 to 50 million tons in the 1930's.

The Second World War brought the demand for anthracite up to about 60 million tons per year in the 1940's, with a crest of almost 65 million tons in 1944. However, the end of the national emergency caused anthracite to drop to 26 million tons in 1955. The 1956 production is estimated at 28 million tons, with that year's increase due entirely to export. In fact if exported tonnage and tonnage sold due to colder weather were subtracted from the 1956 figure, the net result would indicate a loss in 1956 compared with 1955.

Employment provided by the anthracite industry fell from a peak of 180,000 persons in 1914 to approximately 38,000 in 1956.

I have given you this information only for one purpose, that is to point out the need and urgency to find new and additional ways to use anthracite, in order to reverse its trend to lower production. Continuation of the anthracite industry is important to the economy of

this State and the Nation. The availability of a ready supply of anthracite is necessary in the event of national emergency.

The 1955 General Assembly of Pennsylvania recognized the need of research to assist the coal industries of the State. For the first time in history it enacted legislation creating a coal research board in the department of mines and mineral industries, and appropriated $500,000 for use in carrying out its program. Similar acts had been before the general assembly at other sessions. I believe the urgent request of the United Mine Workers of America to the present State administration was largely instrumental in its enactment at this time.

The research board set up by the State law consists of 2 anthracite operators, 2 bituminous coal operators, 1 representative of the Labor Collective Bargaining Agency of the anthracite industry, and 1 of the bituminous coal industry, all of whom are appointed by the Governor for 3-year terms. The secretary of mines and mineral industries is a member of the board, and its chairman by virtue of his office.

I am pleased to inform you that the coal research board of our State has had a number of meetings, and that the fund currently appropriated to it has been allocated for use in its entirety. Because of the more dire need of anthracite the $500,000 fund was divided equally between anthracite and bituminous coal research in spite of the predominance of bituminous coal production in the State.

The present allocations as made by the board are as follows:

Anthracite:	
Expert research	$17,500
Technological study, Anthracite Institute research projects, the Pennsylvania State University	204,500
Balance in fund for administration and contingencies	28,000
Total	250,000
Bituminous:	
Factors affecting plasticity of Pennsylvania bituminous coals in relation to design of combustion equipment, Bituminous Coal Research, Inc	60,800
Research projects, the Pennsylvania State University	144,200
The molecular distillation of coal, Carnegie Institute of Technology	20,000
Balance in fund for administration and contingencies	25,000
Total	250,000

The projects to be undertaken at the Pennsylvania State University with the funds allotted to it as indicated above are as follows:

Anthracite:

1. The mechanism of the thermal decrepitation of anthracite.
2. The behavior of petrographically distinct anthracite particles under thermal stress.
3. Investigation of the chemical nature, physical structure, and distribution of ash in anthracite.
4. The mineral constituents of anthracite and their relationships to the chemical characteristics of ash.
5. The grindability of anthracite.
6. The production of metallurgical coke from blends of anthracite and bituminous coal.
7. Effect of radiation on the physical and chemical properties of anthracite.

Bituminous:

1. Production of chemicals from bituminous coal by the use of prehydrogenated aromatic fractions.
2. Reaction of bituminous coals with concentrated sulfuric acid.
3. Preparation of highly porous carbons from humic acids derived from nitric acid treatment of bituminous coal.
4. The reduction of sulfur in coal during carbonization.
5. Correlation of laboratory tests on ignitability, reactivity, plasticity, etc., of Pennsylvania's bituminous coals.
6. The petrography of the mineable bituminous coals of Pennsylvania and the mode of sulfur occurrence.
7. Effect of radiation on the physical and chemical properties of bituminous coal and coal byproducts.

In order to continue this State program for coal research, for the purpose of obtaining permanent advantages to our coal industries, and to the economy of our Commonwealth, we are requesting an increased appropriation on this account from the forthcoming biennium. It is our sincere belief that the surface has only been scratched as to the possibilities of accomplishment through research in coal.

There are innumerable subjects and problems relative to the production, preparation, use, and sales of coal that need to be resolved through serious and extensive research. Under date of May 1956, the United States Bureau of Mines, in cooperation with Bituminous Coal Research, Inc., printed Information Circular 7754 entitled "Outlook and Research Possibilities for Bituminous Coal." This publication lists 209 research possibilities relative to bituminous coal.

We have had several pleasant discussions with Mr. J. A. Corgan, Chief, Anthracite Region, United States Bureau of Mines, relative to projects suggested by his people pertaining to anthracite. In our discussions with representatives of the Pennsylvania State University, 79 subjects were suggested for anthracite research. We will be glad to arrange to have these lists submitted to you if you so desire.

Information obtained from producers and users of carbon and activated carbon indicates a growing possibility of the use of anthracite for their needs if research can prove it to be adaptable.

The present program of coal research by the Commonwealth of Pennsylvania has been established without Federal aid. I believe greater total accomplishments would be obtained by continuing our separate State program and by inaugurating a separate Federal program.

I strongly urge that the Federal Government arrange to take an active part in coal research, promptly and on a broad scale. I am certain such action would prove to be of immeasurable value to the economy of our Nation and to its defense in times of emergency.

For your reference I am leaving with you informative papers on Pennsylvania's coal industries and its coal research board. These are:

1. Brief of State Act providing for Coal Research Board.
2. Sample Agreement between Coal Research Board and Research Agency.
3. Anthracite production statistics from records of Pennsylvania Department of Mines and Mineral Industries.
4. History of Pennsylvania Bituminous Coal, 1955.
5. Brief résumé—Pennsylvania Anthracite Coal.

I am very appreciative of having had this opportunity to appear before you relative to this vital and important subject.

(By later order of the committee information supplied by Mr. Kennedy follows:)

AN ACT

The General Assembly of the Commonwealth of Pennsylvania hereby enacts as follows:

Section 1. Section two hundred three of the act approved the ninth day of April one thousand nine hundred twenty-nine (Pamphlet Laws 177) entitled "An act providing for and reorganizing the conduct of the executive and administrative work of the Commonwealth by the Executive Department thereof and the administrative departments boards commissions and officers thereof including the boards of trustees of State Normal Schools or Teachers Colleges abolishing creating reorganizing or authorizing the reorganization of certain administrative departments boards and commissions defining the powers and duties of the Governor and other executive and administrative officers and of the several administrative departments boards commissions and officers fixing the salaries of the Governor, Lieutenant Governor and certain other executive and administrative offices providing for the appointment of certain administrative officers and of all deputies and other assistants and employes in certain departments boards and commissions and prescribing the manner in which the number and compensation of the deputies and all other assistants and employes of certain departments boards and commissions shall be determined" as last amended by the act approved the twenty-eighth day of July one thousand nine hundred fifty-three (Pamphlet Laws 656) is hereby further amended to read as follows:

Section 203 of the Act, approved the ninth day of April one thousand nine hundred twenty-nine is further amended to read as follows:

"*In the Department of Mines—Coal Research Board.*"

Said act is hereby further amended by adding after section four hundred sixty-three thereof a new section to read as follows:

"Coal Research Board—The Coal Research Board shall consist of six citizens of the Commonwealth appointed by the Governor and the Secretary of Mines who shall be the Chairman of the Board.

"The appointed members of the board two of whom shall be anthracite operators, two bituminous coal operators, one a representative of the Labor Collective Bargaining Agency of the Anthracite Industry and one a representative of the Labor Collective Bargaining Agency of the Bituminous Coal Industry shall be familiar with the technology or economics of the anthracite or bituminous coal industry and shall be appointed for three year terms."

Said act is hereby further amended by adding after section one thousand nine hundred five thereof a new section to read as follows:

"Section 1906. Coal Research Board—The Coal Research Board is authorized to conduct or cause to be conducted thorough and comprehensive research studies and research programs in the technology the economics and the marketing of bituminous and anthracite coal and their by-products for the purpose of developing new uses and increased markets for such coal."

With the approval of the Governor the Board is authorized to enter into mutually satisfactory contracts or agreements with any person firm institution or corporation as well as any State or Federal agency which the board deems wise necessary and expedient in carrying out its objectives but the board in so far as it is practicable shall make such contracts or agreements with persons associations and institutions located within the Commonwealth of Pennsylvania. The board may subject to the approval of the Governor make grants to public and private scientific schools institutions and associations which have the necessary existing research laboratory facilities for the accomplishment of its powers and to this end it may use any matching or donated funds available from the Federal government private or philanthropic concerns associations and institutions.

Section 4. The sum of five hundred thousand dollars ($500,000) is hereby appropriated to the Department of Mines for the use of the Coal Research Board in the administration of this act.

Section 5. This act shall become effective immediately upon final enactment.

AGREEMENT

This Agreement, made by and between the Coal Research Board of the Department of Mines and Mineral Industries of the Commonwealth of Pennsylvania, hereinafter referred to as Board and ———, hereinafter referred to as Research Agency.

WITNESSETH:

Whereas, the Board "* * * is authorized to conduct or cause to be conducted thorough and comprehensive research studies and research programs in the technology, the economics and the marketing of * * * coal * * * for the purpose of developing new uses and increased markets for such coal; and

Whereas, funds have been appropriated by the Commonwealth of Pennsylvania for such purposes; and

Whereas, the Board is authorized to make grants to persons, institutions and associations which have the necessary existing research laboratory facilities for the accomplishment of its powers and, to this end, * * * may use any matching or donated funds available from * * * associations and institutions; and

Whereas, the Research Agency has represented that it has available laboratory facilities, equipment and experienced scientific and engineering personnel to conduct the studies referred to in this contract and to reduce promising results to practice in full scale equipment; and

Whereas, the Research Agency represents that it is prepared to undertake the studies involved immediately and to pursue them expeditiously and properly to conclusion;

Now, therefore, in consideration of the premises herein, the parties hereto contract and agree as follows:

SCOPE OF RESEARCH

1. The Research Agency shall conduct a project on ———. In accordance with a proposed research program submitted by the Research Agency to the Board, a copy of which is attached hereto, marked and referred to as Exhibit A and made a part hereof and the Research Agency does agree to devote as much time and attention to that end as is reasonably needed for its sufficient conduct.

FUNDS AND CONDITIONS

2. In consideration of the Research Agency conducting the above mentioned project, the Board agrees to make to the Research Agency a grant in the sum of ——— dollars during a period of years as follows:

The sum of ——— dollars at the execution of this agreement and equal sums semiannually thereafter for the duration of the period of the project. However, the Research Agency shall submit a written report to the Board no later than four and one-half months after receipt of the initial payment. The Board shall then consider the report and shall determine whether the program and project are proceeding as set forth in the proposal of the project attached hereto. If the Board is satisfied that the program is proceeding as called for under the Agreement, there shall be disbursed six months after the first disbursements the second semiannual payment. This procedure shall be followed for the duration of this contract; and for the duration of the program reports and payments to be made six months after initial reports and payments, respectively. Should the Board, however, feel that the program has not progressed adequately or that the program has varied from the proposal, the Board may in its discretion terminate this Agreement forthwith. The Board may, though it need not, suggest to the Research Agency the deficiencies found and may suggest correction of same. The failure of the Research Agency to comply with such request shall be an additional, adequate cause of the Board to terminate this Agreement. The Board may, in its discretion, vary the method of payments to accommodate any situation arising in the program.

3. It is understood and agreed that the Research Agency shall receive the funds herein referred to and keep them separate and apart from any other of its monies so that there will be no intermingling of funds and no expenditure of the grant for other than the specific purposes herein provided for.

DISBURSEMENTS OF FUNDS

4. The Research Agency shall accept the sums so to be paid by the Board and shall devote them to the furtherance of this Research Project as hereinafter indicated.

A. Out of the monies received from the Board under this Agreement, the Research Agency shall pay over as compensation to the Research Personnel such amounts from time to time as may be agreed upon by the Research Agency and the Research Personnel.

B. The Research Agency shall also, out of the said money, purchase such special equipment apparatus, chemicals, and other supplies and materials as may be deemed necessary for the efficient prosecution of the Research. However, it is agreed and understood that no major equipment of appliances or capital expenditures shall be made by the Research Agency without prior written notice to and the approval of the Board. It is distinctly understood and agreed that the monies for this project are for the purchase of ordinary equipment and supplies necessary for the operation of the project, that the facilities and the major items of equipment are represented by the Research Agency as already in the possession of the Research Agency. Any equipment purchased, in order to carry out these researches, will become the property of the Research Agency and will remain so upon the termination of this Agreement unless such equipment be of the nature the purchase of which required the prior approval of the Board, in which case the Board at the time of granting its approval may restrict ownership of such equipment.

C. The Research Agency shall charge the said fund for traveling expenses and other direct and indirect expenses incident and related to the Research Program concerned. However, there shall be charged no overhead to this grant, unless otherwise agreed to in writing by the Board.

D. The Research Agency will render to the Board at the time it renders a progress report, a statement summarizing receipts and expenditures for this project.

E. The Board or its duly appointed representative shall have the right to examine periodically during usual business hours, records of expenditure of funds.

RESEARCH PERSONNEL

The Research Personnel shall be appointed by the Research Agency and shall work under the advice and direction of a duly appointed supervisor or director of the project. All Personnel shall be deemed to be and shall be employees of the Research Agency. The Research Agency shall have the obligation to see that all personnel are adequately and properly insured, covered by Workman's Compensation or other insurance and that all Personnel shall be under contract with the Research Agency. The Research Agency further represents that each of its employees has or shall enter into a contract of employment which provides for assignment to the Research Agency and the Board of all inventions or discoveries made by said employees during the course of his employment. The Research Agency agrees that if during the period of this Agreement any of its employees shall make a discovery or invention while working on this project, the Research Agency will promptly make such discovery known to the Board.

REPORTS

6. The Research Agency agrees that all information obtained by the Research Agency through work on the project specifically defined above shall be made available to the Board. The Research Agency will communicate to the Board promptly without request through its report, all information which it deems pertinent to the project as it progresses. Further, the Research Agency agrees that the Board may and the Board does have the right to send Representatives periodically to the Research Agency to determine the progress of the Research Project. It is agreed that the actual conduct of such research and experiments shall at all times be under the control of the Representatives of the Research Agency.

PUBLICATIONS

7. The Board hereby grants to the Research Agency the right to present and have published technical papers based on the results and progress of this project. However, the manuscripts of such papers shall be submitted to the Board for review and advice and approval before presentation to societies or publication. Each report or technical paper shall give proper credit to the Board for participation in this project. The cost of preparation and presentation of these papers shall be made at the cost of the Research Agency unless otherwise arranged for by Board approval. The Research Agency shall have the right to report progress on the project to its member agencies and advisory committees.

PATENTS COPYRIGHTS

8. After any discoveries or inventions have been made, the Research Agency shall notify the Board. The Research Agency and Board shall jointly arrange for the obtaining of letters patent or for any copyrights, title to which will be held jointly by the Research Agency and by the Board. It is understood and agreed, further, that should it be advisable under all circumstances that the patents or copyrights be assigned to a nonprofit corporation for administration in accordance with the principles and objectives of the statute creating the Board and providing for the funds that such will be done. Administration of such matters shall be determined jointly by the Board and the Research Agency.

LOCALE AND COAL OF PROJECT

9. It is agreed and understood that whenever possible and to the greatest extent possible research and work on this project shall be performed within the Commonwealth of Pennsylvania and with Pennsylvania Coal.

TERMINATION

10. This contract may be terminated by mutual agreement whenever so expedient, or by the Board without liability should funds be curtailed or further legislation alter the present statutes, or as otherwise provided above.

PERIOD OF PROJECT

11. This Agreement shall be effective from the day of ——— until the proposed researches are completed and/or the funds exhausted and/or the contract terminated as herein provided for and shall be subject to renewal only by mutual written Agreement of the parties hereto.

In witness whereof, the parties have hereunto set their hands and seals this ——— day of ——— 1957.

WITNESSETH:

---------- (SEAL)
---------- (SEAL)

Governor of Pennsylvania.

APPROVED:

COMMONWEALTH OF PENNSYLVANIA, DEPARTMENT OF MINES AND MINERAL INDUSTRIES—ANTHRACITE DIVISION

Total production of coal, production from stripping and washeries; employees, fatalities, etc., 1870–1956

Year	Total production (net tons)	Washery production (net tons)[1]	Stripping production (net tons)[1]	Employees	Fatalities	Production per fatality	Fatalities per million tons	Number of inspectors
1870[2]	14,172,004	(3)	(4)	35,600	211	67,166	14.89	5
1871	15,532,252	(3)	(4)	37,488	210	73,963	13.52	5
1872	15,567,973	(3)	(4)	44,745	223	69,811	14.32	5
1873	21,001,521	(3)	(4)	48,199	264	79,551	12.57	5
1874	19,930,240	(3)	(4)	53,402	231	86,278	11.59	5
1875	23,402,646	(3)	(4)	60,966	238	98,330	10.17	6
1876	23,440,666	(3)	(4)	70,474	228	102,810	9.73	6
1877	24,727,213	(3)	(4)	66,842	194	127,460	7.85	6
1878	20,900,966	(3)	(4)	63,964	187	111,770	8.95	6
1879	31,036,600	(3)	(4)	68,847	262	118,460	8.44	6
1880	27,974,532	(3)	(4)	73,373	202	138,488	7.22	6
1881	34,202,558	(3)	(4)	76,031	273	125,284	7.98	7
1882	35,057,430	(3)	(4)	82,200	295	118,839	8.41	6
1883	37,747,369	(3)	(4)	91,421	323	116,865	8.56	6
1884	36,468,738	(3)	(4)	101,073	332	109,846	9.10	6
1885	38,232,155	(3)	(4)	100,320	332	115,157	8.68	7
1886	38,950,932	(3)	(4)	103,044	279	139,609	7.16	7
1887	42,156,300	(3)	(4)	106,517	316	133,406	7.50	7
1888	46,635,037	(3)	(4)	122,218	364	128,118	7.81	8
1889	43,650,768	(3)	(4)	119,646	397	109,952	9.09	8
1890	44,986,286	(3)	(4)	119,919	378	119,011	8.40	7
1891	49,701,322	(3)	(4)	123,308	428	116,125	8.61	8
1892	51,226,978	(3)	(4)	130,300	418	122,553	8.16	8

See footnotes at end of table.

Total production of coal, production from stripping and washeries; employees, fatalities, etc., 1870–1956—Continued

Year	Total production (net tons)	Washery production (net tons) [1]	Stripping production (net tons) [1]	Employees	Fatalities	Production per fatality	Fatalities per million tons	Number of inspectors
1893	52,841,110	[3]	[4]	138,069	456	115,880	8.63	8
1894	50,966,920	386,960	[4]	139,939	446	114,276	8.75	8
1895	56,948,756	386,534	[4]	143,705	421	135,270	7.39	8
1896	53,843,250	527,809	[4]	150,088	502	107,257	9.32	8
1897	52,581,036	732,743	[4]	149,557	423	124,305	8.04	8
1898	52,812,675	697,759	[4]	142,420	411	129,498	7.78	8
1899	60,518,331	1,055,426	[4]	140,604	461	131,276	7.62	8
1900	57,363,396	1,818,170	[4]	143,824	411	139,570	7.16	8
1901	67,094,665	2,009,864	[4]	147,651	513	130,789	7.65	8
1902	41,340,935	2,965,792	[4]	148,139	300	137,803	7.26	8
1903	75,232,585	4,119,258	[4]	151,827	518	145,237	6.89	15
1904	73,594,369	3,440,420	[4]	161,330	595	123,688	8.08	15
1905	78,647,020	3,897,688	[4]	168,254	644	122,123	8.19	15
1906	72,139,510	4,880,402	[4]	166,175	557	129,514	7.72	19
1907	86,056,412	5,630,169	[4]	168,774	708	121,549	8.23	20
1908	83,543,243	4,635,923	[4]	174,503	678	123,220	8.12	20
1909	80,223,833	5,206,562	[4]	171,195	567	141,488	7.07	20
1910	83,683,994	5,412,167	[4]	168,175	601	139,241	7.18	20
1911	90,917,176	4,555,457	[4]	173,338	699	130,067	7.69	21
1912	84,426,869	4,317,161	[4]	175,098	601	140,477	7.12	21
1913	91,626,964	2,934,157	[4]	175,310	624	146,838	6.81	21
1914	91,189,641	2,702,537	[4]	180,899	600	151,983	6.58	21
1915	89,377,706	3,418,427	[4]	177,339	588	152,003	6.58	21
1916	87,680,198	4,432,606	[4]	159,169	565	155,186	6.44	25
1917	100,445,299	6,408,277	[4]	156,148	581	172,883	5.78	25
1918	99,445,794	7,246,454	[4]	148,226	556	178,859	5.59	25
1919	87,838,024	3,616,675	[4]	153,780	636	138,110	7.24	25
1920	89,636,036	5,435,697	[4]	149,117	490	182,931	5.47	25
1921	90,358,642	1,842,096	[4]	161,926	546	165,492	6.04	25
1922	53,910,201	2,525,402	[4]	159,880	300	179,701	5.56	25
1923	92,653,641	4,212,001	[4]	158,764	515	179,910	5.56	22
1924	87,277,449	1,141,796	[4]	162,503	496	175,963	5.68	22
1925	61,334,145	894,187	[4]	163,825	401	152,953	6.54	18
1926	83,874,590	1,365,175	[4]	168,734	455	184,340	5.42	18
1927	79,367,154	1,841,440	[4]	167,648	492	161,315	6.20	25
1928	74,552,312	1,614,863	[4]	160,721	447	166,784	6.00	25
1929	72,985,844	878,599	[4]	153,422	483	151,109	6.62	25
1930	68,776,559	890,389	[4]	151,171	444	154,902	6.46	25
1931	59,115,387	1,468,572	[4]	138,400	384	153,946	6.50	25
1932	49,501,511	1,062,858	3,545,948	119,480	243	203,710	4.91	21
1933	49,507,577	2,090,906	4,308,811	102,469	232	213,395	4.69	21
1934	56,798,951	1,516,393	4,461,894	106,251	260	218,458	4.58	19
1935	51,359,111	1,876,700	4,962,514	100,539	267	192,356	5.20	17
1936	54,264,016	1,411,988	3,757,678	99,704	241	225,162	4.44	16
1937	51,700,296	1,882,026	5,014,052	99,117	212	243,869	4.10	22
1938	46,269,511	2,031,432	5,080,344	96,998	223	207,487	4.82	20
1939	51,399,707	2,347,269	5,308,049	93,352	210	244,761	4.09	24
1940	51,526,454	2,599,280	6,010,364	90,790	182	283,112	3.53	23
1941	53,942,177	3,689,538	7,855,945	88,849	189	285,408	3.50	22
1942	57,939,629	4,045,970	9,657,307	83,707	225	257,509	3.88	22
1943	60,511,730	7,715,860	8,688,896	79,369	218	277,577	3.60	23
1944	64,112,589	10,527,481	10,925,619	78,145	171	374,927	2.67	24
1945	55,901,235	9,454,205	10,521,174	76,265	137	408,038	2.45	23
1946	61,978,710	9,214,678	12,912,992	80,556	169	366,738	2.73	24
1947	58,227,985	7,076,796	12,691,382	80,730	165	352,897	2.83	24
1948	59,108,810	6,735,688	13,485,837	80,390	131	451,212	2.22	26
1949	44,710,118	4,823,144	11,081,087	79,209	92	485,980	2.06	26
1950	46,339,255	4,027,249	12,291,325	75,231	86	538,829	1.86	25
1951	42,389,055	4,843,834	11,376,379	70,357	94	450,947	2.22	25
1952	40,067,130	4,710,495	11,019,185	66,438	92	435,512	2.30	25
1953	30,495,391	3,892,083	8,883,984	56,952	59	516,871	1.93	25
1954	26,612,312	3,055,528	7,852,186	44,731	47	566,219	1.76	24
1955 [5]	25,934,792	3,618,121	7,826,029	37,397	60	432,247	2.31	20
1956 [6]	28,029,074	4,153,048	8,659,908	38,440	54	519,057	1.93	18

[1] Included in total production.
[2] No accurate record previous to 1870.
[3] No accurate record previous to 1894.
[4] No accurate record previous to 1932.
[5] In 1955, for the 1st time in the history of the Pennsylvania Department of Mines, the production, employees, and fatalities of deep mines employing fewer than 5 persons inside are included in the region totals.
[6] The figures for the year 1956 are estimated.

Bituminous Coal Production

(a) *Production from 1759 to 1876*

Year:	*Production*	Year—Con.	*Production*	Year—Con.	*Production*
1759	50	1799	79, 000	1839	731, 322
1760	50	1800	87, 000	1840	699, 994
1761	100	1801	89, 000	1941	783, 515
1762	100	1802	92, 000	1842	833, 900
1763	100	1803	94, 000	1843	887, 100
1764	100	1804	97, 100	1844	981, 500
1765	100	1805	100, 100	1845	1, 130, 000
1766	100	1806	104, 200	1846	1, 255, 500
1767	100	1807	108, 200	1847	1, 466, 900
1768	100	1808	112, 300	1848	1, 767, 300
1769	100	1809	116, 600	1849	1, 952, 500
1770	100	1810	120, 700	1850	2, 147, 500
1771	100	1811	130, 800	1851	2, 403, 300
1772	100	1812	143, 000	1852	2, 719, 200
1773	100	1813	155, 100	1853	2, 944, 800
1774	100	1814	169, 300	1854	3, 230, 800
1775	150	1815	183, 600	1855	3, 429, 700
1776	150	1816	205, 900	1856	3, 695, 786
1777	150	1817	228, 000	1857	4, 335, 039
1778	200	1818	251, 300	1858	4, 383, 560
1779	200	1819	232, 900	1859	4, 504, 000
1780	400	1820	225, 600	1860	4, 710, 400
1781	600	1821	233, 900	1861	4, 562, 200
1782	800	1822	243, 000	1862	4, 995, 600
1783	1, 000	1823	251, 200	1863	5, 332, 600
1784	3, 000	1824	260, 400	1864	6, 051, 600
1785	5, 000	1825	270, 050	1865	6, 372, 900
1786	10, 000	1826	294, 680	1866	6, 512, 300
1787	15, 000	1827	320, 850	1867	6, 441, 800
1788	20, 000	1828	347, 500	1868	7, 348, 400
1789	25, 000	1829	372, 100	1869	8, 878, 000
1790	30, 000	1830	397, 700	1870	9, 223, 856
1791	34, 000	1831	425, 340	1871	12, 023, 130
1792	38, 000	1832	450, 940	1872	12, 920, 876
1793	42, 000	1833	437, 240	1873	13, 787, 700
1794	46, 000	1834	504, 540	1874	12, 559, 800
1795	50, 000	1835	531, 640	1875	12, 443, 860
1796	57, 000	1836	607, 420	1876	12, 282, 000
1797	64, 000	1837	575, 260		
1798	71, 000	1838	618, 263		

(b) Total production, stripping production, and employees from 1877 to 1954

Year	Production (net tons)	Stripping production	Employees	Year	Production (net tons)	Stripping production	Employees
1877	14,000,000		16,627	1916	169,123,814		174,304
1878	12,500,741		25,787	1917	171,074,411		186,586
1879	14,341,369		27,286	1918	177,217,294		181,678
1880	16,564,440		33,391	1919	147,085,781		180,831
1881	15,916,123		35,530	1920	166,929,002		184,168
1882	20,694,110		42,393	1921	114,447,134		200,419
1883	18,729,817		35,001	1922	108,310,046		194,630
1884	20,553,090		39,904	1923	169,181,137		200,538
1885	23,413,692		44,145	1924	128,751,028		174,469
1886	27,107,173		52,364	1925	135,266,612		165,586
1887	29,966,855		57,868	1926	151,746,464		164,782
1888	33,772,286		61,565	1927	131,644,922		158,204
1889	34,625,054		62,084	1928	129,846,153		137,944
1890	40,784,003		67,383	1929	142,351,359		135,272
1891	41,787,644		74,135	1930	123,417,850		133,703
1892	46,576,576		78,805	1931	96,846,250		119,265
1893	43,421,898		81,872	1932	74,162,485		106,597
1894	39,800,210		86,118	1933	78,511,864		116,917
1895	51,813,112		84,976	1934	89,592,481		127,868
1896	50,273,656		83,801	1935	91,140,273		129,350
1897	54,674,272		86,553	1936	108,964,865		133,914
1898	64,247,635		87,803	1937	110,417,947		133,487
1899	73,066,943		91,505	1938	76,881,944		115,347
1900	79,318,362		108,735	1939	89,397,222	2,792,966	117,959
1901	80,914,236		117,501	1940	111,416,916	2,808,607	117,832
1902	98,970,426		135,611	1941	127,469,207	6,479,220	124,921
1903	103,713,982		151,745	1942	142,759,563	10,303,160	117,481
1904	99,600,167		155,747	1943	139,801,363	17,177,054	105,903
1905	119,361,514		164,941	1944	144,408,418	22,211,061	99,942
1906	129,532,989		172,928	1945	130,696,854	26,675,095	98,764
1907	149,559,047		183,121	1946	123,587,065	31,047,425	103,894
1908	114,937,375		181,840	1947	144,761,964	35,946,734	109,202
1909	136,205,695		185,921	1948	130,627,789	33,483,099	110,327
1910	148,770,858		193,488	1949	87,351,892	21,326,389	100,119
1911	142,189,329		182,653	1950	103,439,887	25,460,343	94,514
1912	160,830,492		182,642	1951	106,680,097	22,688,543	86,369
1913	172,965,659		189,909	1952	87,308,999	19,462,498	76,676
1914	145,884,530		196,038	1953	91,938,156	19,538,037	69,126
1915	157,420,068		187,734	1954	70,823,985	16,954,885	55,405

Bituminous Coal Resources and Reserves

(a) By county

County	Original deposit	Mined out and lost	Recoverable
Allegheny	3,194,820,000	1,350,200,000	1,117,948,000
Armstrong	3,750,700,000	206,290,000	2,392,100,000
Beaver	1,261,797,000	15,051,000	651,492,000
Bedford	285,000,000	50,000,000	220,000,000
Blair	78,516,000	29,418,000	30,990,000
Bradford	44,440,000	14,735,900	15,279,000
Butler	4,154,807,000	71,900,000	2,224,911,000
Cambria	5,383,000,000	855,900,000	3,249,080,000
Cameron	61,500,000	762,000	33,134,000
Centre	514,485,000	97,497,000	252,829,000
Clarion	2,042,800,000	115,468,000	1,206,832,000
Clearfield	3,992,000,000	428,103,000	2,045,507,000
Clinton	114,380,000	24,196,000	38,605,000
Elk	559,781,000	74,196,000	226,277,000
Fayette	5,229,734,000	1,319,391,000	2,184,553,000
Fulton	33,000,000	6,000,000	27,000,000
Greene	9,464,215,000	228,785,000	6,047,566,000
Huntingdon	140,629,300	40,000,000	90,000,000
Indiana	6,339,400,000	487,283,000	4,100,517,000
Jefferson	3,334,900,000	330,762,000	2,072,038,000
Lawrence	1,007,866,000	23,099,000	477,366,000
Lycoming	72,000,000	8,017,000	38,983,000
McKean	422,865,000	2,208,000	225,710,000
Mercer	499,680,000	83,125,000	221,415,000
Somerset	6,091,800,000	343,032,000	3,831,352,000
Tioga	155,432,000	52,980,000	50,680,000
Washington	10,526,023,000	993,827,000	5,045,616,000
Westmoreland	6,381,504,000	1,460,785,000	3,054,856,000

(b) *By county and seam height*

[Millions of net tons]

County	Original deposit	Mined out and lost	Reserves over 3 feet	Reserves 2 to 3 feet	Reserves 1 to 2 feet
Allegheny	3,194	1,350	365	460	390
Armstrong	3,750	206	850	285	1,245
Beaver	1,261	15	5	225	420
Bedford	285	50	95	45	90
Blair	78	29	5	10	15
Bradford	44	14	1	4	10
Butler	4,154	71	90	770	1,360
Cambria	5,383	855	100	1,080	1,910
Cameron	61	1		5	10
Centre	514	97	5	115	155
Clarion	2,042	115	35	525	640
Clearfield	3,992	428	75	825	1,140
Clinton	114	24	5	15	20
Elk	559	74	15	60	150
Fayette	5,229	1,319	740	670	760
Fulton	33	6	2	10	15
Greene	9,464	228	2,480	1,255	2,310
Huntingdon	140	40	20	30	50
Indiana	6,339	487	700	1,440	1,950
Jefferson	3,334	330	335	835	995
Lawrence	1,007	23	20	165	270
Lycoming	72	8	3	13	18
McKean	422	2	2	100	120
Mercer	499	83	20	75	120
Somerset	6,091	343	635	1,265	1,930
Tioga	155	52	5	15	30
Washington	10,526	993	2,140	835	2,070
Westmoreland	6,381	1,460	1,330	670	1,050

Coke and Its Byproducts

(a) *Coke*

The earliest reference to coke so far found was in an advertisement in the Pittsburgh Gazette on June 15, 1818, which referred to the Plumpsock Iron Works, 9 miles east of Brownsville. From the first mention of coke in 1818, little was used until 1859 when Connellsville coke was used in Pittsburgh; and since then its growth has been rapid.

The development of the coke industry has been closely associated with the production of iron. In this field coke replaced anthracite and bituminous coal, which had earlier replaced charcoal. Coke was first produced by the controlled combustion of coal piled in heaps. The brick oven did not appear until a later date. The beehive oven became firmly established as the most satisfactory method then available for coke production, and the suitability of this coke for blast-furnace fuel led to a steady expansion in its use. The superior coking quality of the coal obtained from the Pittsburgh bed resulted in the development of the industry in the Connellsville district, which became world famous for this product.

The installation of byproduct ovens, which has altered the whole industry, permits the recovery of valuable byproducts lost in the beehive process. The first byproduct oven installed in Pennsylvania was erected in Johnstown, and put in use in 1895. Since that year, there has been a steady increase in the productive capacity of byproduct ovens so that byproduct coke attained a greater tonnage than beehive coke in 1921. With the exception of a few years, this position has been maintained. The dislocation of normal channels of trade in 1914 attracted attention to the dependence of this country upon foreign imports of synthetic chemical preparations—most of which were byproducts of the coke industry. The impetus supplied by this wartime condition led to the recognition of the importance of coal-tar derivatives for many dyes, drugs, explosives, and similar products. Therefore, our interest in these materials was accelerated to an exceptional degree. This condition was repeated in World War II due to a record steel production made possible by adequate coke supplies. These supplies were obtained in part by the rehabilitation of all beehive ovens possible. Beehive coke production in Pennsylvania increased over 1,000 percent from 1938 to 1941. A decrease, when the peak of wartime demand is passed, can always be expected.

(*b*) *Byproducts*

(1) Coke-oven gas: Gas is now the most valuable coke-oven byproduct. In addition to supplying the fuel needs of the ovens, a surplus is sold for industrial purposes and for distribution through city mains. The revenue obtained from the sale of excess gas commonly exceeds 50 percent of the total derived from all products.

(2) Tar: Coal tar is the basic material for hundreds of compounds. The crude tar must be processed. Plants not properly equipped sell their output to refineries. Crude tar is used as a fuel, particularly in heating open hearths in the steel industry. This wasteful use is declining as the recovery of valuable constituents is proving to be more profitable.

(3) Ammonia: The bulk of ammonia recovered from byproduct ovens goes into ammonia sulfate. It is used extensively in the manufacture of nitric acid, explosives, and as a fertilizer.

(4) Light oil: Light oil contains some of the most useful derivatives of coal, particularly benzol and tuluol. Phenol, aniline, picric acid, TNT, and hundreds of other less well-known compounds valuable as dyes, drugs, and chemical reagents are derived from these compounds. Naphthalene, an important derivative from tar and light oil, is used as a moth repellent and in the manufacture of resins, explosives, and other materials.

(5) Manufactured gas: Gas manufactured from coal, with additions of some excess coke-oven gas, is distributed by the public utilities essentially for industrial use and home heating and cooking.

(*c*) *Products and byproducts*

The following are some of the products and byproducts of coal and coke: Acetanilide, alizarin, ammonium carbonte, ammonium chloride, ammonium nitrate, ammonium sulfate, anhydrous ammonia, aniline, antiseptics, aqua ammonia, artificial rubber, artificial silk, aspirin, automobile parts, bakelite, battery carbons, benzene, benzoic acid, benzol, bleaching compounds, brush bristles, buttons, carbon bisulfide, carborundum, coal gas, cough medicine, creosote, cyanogen, disinfectants, dry cells, drugs, dyestuffs, electrodes, explosives, fertilizers, flavoring extracts, fountain pens, graphite, indigo, insecticides, insulating materials, jewelry, lampblack, laxatives, medicines, mothballs, motor fuel, naphtha, naphthalene, oven carbon, paints and varnishes, paving materials, perfumes, phonograph records, photographic chemicals, picric acid, pipe coating, pitch, plastic materials, radio parts and cabinets, resorcinol, roofing, saccharin, salicylic acid, sheep-dip, smelling salts, sodas, stockings, sulfur, synthetic resins, tanning solutions, tarred felt, TNT, toluol, toothbrush bristles, water gas, waterproofing, wood preservatives.

(*d*) *Production of coke from 1891 to 1954*

Year:	*Production*	Year—Con.	*Production*	Year—Con.	*Production*
1891	6, 591, 543	1913	24, 718, 238	1935	563, 833
1892	7, 891, 631	1914	17, 164, 124	1936	1, 186, 194
1893	5, 549, 297	1915	22, 012, 945	1937	3, 889, 825
1894	5, 729, 244	1916	26, 428, 926	1938	1, 096, 707
1895	8, 922, 320	1917	23, 240, 777	1939	2, 157, 106
1896	6, 613, 180	1918	21, 591, 827	1940	3, 851, 931
1897	8, 533, 291	1919	14, 283, 713	1941	6, 599, 246
1898	10, 171, 920	1920	16, 122, 000	1942	8, 670, 184
1899	12, 192, 570	1921	4, 876, 289	1943	8, 356, 785
1900	12, 185, 112	1922	7, 692, 899	1944	5, 834, 548
1901	13, 125, 156	1923	17, 398, 427	1945	4, 654, 038
1902	14, 941, 091	1924	9, 551, 175	1946	4, 100, 828
1903	14, 286, 995	1925	10, 589, 359	1947	5, 647, 890
1904	13, 281, 475	1926	11, 851, 980	1948	5, 597, 306
1905	18, 519, 310	1927	5, 595, 264	1949	2, 810, 404
1906	20, 681, 702	1928	3, 441, 949	1950	4, 671, 401
1907	23, 516, 309	1929	6, 791, 261	1951	6, 082, 307
1908	13, 839, 656	1930	3, 213, 302	1952	3, 538, 784
1909	22, 503, 944	1931	844, 250	1953	4, 610, 788
1910	23, 722, 944	1932	517, 161	1954	440, 282
1911	19, 984, 320	1933	724, 167		
1912	24, 682, 474	1934	723, 345		

FATALITIES

(a) Fatalities, production for fatal, fatalities per 1,000 employees, fatalities per 1 million tons of coal produced, and the number of mine inspectors from 1878 to 1954

Year	Number of fatalities	Production per fatal	Fatals per 1,000 employees	Fatals per 1 million tons produced	Number of inspectors
1878	48	260,432	1.86	3.84	3
1879	55	242,570	2.01	3.82	3
1880	48	345,092	1.43	2.90	3
1881	57	279,230	1.60	3.58	4
1882	94	220,150	2.22	4.54	4
1883	54	346,848	1.54	5.02	6
1884	105	195,744	2.63	5.11	6
1885	83	282,092	1.88	3.54	8
1886	74	366,313	1.41	2.73	8
1887	84	356,748	2.14	2.80	8
1888	90	375,248	1.46	2.66	8
1889	105	329,762	1.69	3.03	8
1890	146	273,179	2.17	3.37	0
1891	237	176,395	3.20	5.67	8
1892	134	347,623	1.70	2.88	0
1893	131	334,015	1.60	3.02	10
1894	123	320,969	1.50	3.09	10
1895	156	332,167	1.84	3.01	10
1896	180	279,359	2.15	3.58	10
1897	150	364,168	1.73	2.75	18
1898	200	321,238	2.28	3.11	18
1899	258	283,205	2.82	3.53	10
1900	265	299,315	2.44	3.34	12
1901	301	268,818	2.56	3.72	12
1902	456	216,072	3.36	4.63	15
1903	402	257,995	2.65	3.83	16
1904	536	185,821	3.44	5.38	15
1905	479	249,189	2.90	4.01	16
1906	477	271,557	2.76	3.68	18
1907	806	185,557	4.40	5.39	20
1908	572	200,939	3.15	4.98	20
1909	506	269,181	2.72	3.71	21
1910	539	276,013	2.79	3.62	21
1911	515	276,096	2.82	3.62	25
1912	446	360,606	2.44	2.77	20
1913	611	283,086	3.22	3.53	28
1914	413	353,231	2.11	2.83	28
1915	442	356,154	2.35	2.81	30
1916	436	387,899	2.50	2.58	30
1917	494	346,304	2.65	2.89	30
1918	494	358,739	2.72	2.79	30
1919	401	366,797	2.22	2.73	30
1920	424	393,700	2.30	2.54	30
1921	284	402,983	1.42	2.48	30
1922	424	255,448	2.18	3.91	30
1923	401	421,898	2.00	2.37	30
1924	345	373,191	1.98	2.68	30
1925	312	433,547	1.88	2.31	30
1926	421	360,443	2.55	2.77	30
1927	355	370,831	2.24	2.70	30
1928	508	255,603	3.68	3.91	30
1929	378	376,591	2.79	2.66	30
1930	296	416,952	2.21	2.40	30
1931	207	467,856	1.74	2.14	30
1932	155	478,468	1.45	2.09	30
1933	135	581,569	1.15	1.72	26
1934	156	574,312	1.22	1.74	26
1935	161	566,089	1.24	1.77	26
1936	190	573,499	1.42	1.74	26
1937	186	593,645	1.39	1.68	25
1938	119	646,066	1.03	1.55	25
1939	120	744,977	1.02	1.34	25
1940	188	592,643	1.60	1.68	25
1941	166	767,887	1.32	1.29	23
1942	187	763,420	1.50	1.30	27
1943	178	785,400	1.68	1.27	26
1944	164	880,530	1.64	1.14	25
1945	140	933,548	1.42	1.08	27
1946	128	965,524	1.23	1.04	27
1947	132	1,096,681	1.21	.92	27
1948	114	1,145,857	1.04	.87	27
1949	65	1,343,875	.64	.74	29
1950	83	1,246,264	.88	.85	29
1951	70	1,524,001	.81	.66	29
1952	62	1,408,210	.81	.71	30
1953	67	1,372,211	.97	.73	30
1954	44	1,609,636	.80	.63	29

ACKNOWLEDGMENT

(a) *Much of the preceding material was obtained from publications of the following agencies*

(1) Pennsylvania Department of Mines.
(2) Pennsylvania Department of Internal Affairs.
(3) Pennsylvania State University.
(4) Pennsylvania Topographic and Geologic Survey.

PENNSYLVANIA ANTHRACITE COAL

INTRODUCTION

Anthracite coal, mined in Pennsylvania, is the finest solid fuel for home heating that nature has produced. It consists principally of pure carbon and burns without causing smoke and without caking. It retains fire well and responds quickly to any increase or decrease of draft. These properties make it desirable for industrial use, particularly in large cities, as well as for household use. It is prepared in small sizes so that it can be used in modern automatic firing units and compares favorably in heating cost with liquid and gaseous fuels.

Anthracite coal underlies an area of abolt 480 square miles in northeastern Pennsylvania. This area includes 10 counties, 6 of which produce substantially all the anthracite coal mined. These six are Carbon, Columbia, Lakawanna, Luzerne, Northumberland, and Schuylkill Counties. Over 1 million people live in this anthracite producing region and their home communities depend basically upon the production of this fine fuel for their economic existence.

OCCURRENCE

Anthracite coal occurs beneath the surface in layers, commonly called "veins or beds," lying between strata (layers) of shale, slate, and sand rocks. These veins vary in thickness from 2 to 60 feet, and in exceptional cases are even thicker. Their extremities, or outcrops, reach almost to the surface. Their deepest locations, or basins, lie over 2,000 feet beneath the surface. It is apparent from the exposed ledges and shelves of rock in the anthracite region that the rock strata and the coal veins lie at all angles from horizontal to vertical. The forces of nature that caused this bending and wrinkling of the strata squeezed anthracite to its hard, compact, bright, smoke-free condition. This same bending created more difficult conditions under which mining must be done as compared with those under which the more flat lying bituminous or soft coals are found.

USE

The fact that anthracite coal would burn was known to hunters and woodsmen many years ago. They built fires to keep warm under rock ledges where anthracite was exposed to the surface (outcropped) and the coal became ignited for a short time.

Anthracite was used in forges at Carlisle, Pa., during the Revolutionary War. This use required continuous forced draft.

However, it was not until 1808, when Judge Jesse Fell, of Wilkes-Barre, found a way to keep an anthracite fire burning continuously in an open grate that its adaptability to use for heating became apparent. From that time continually improved stoves and furnaces for using anthracite in the home for heating and for cooking were developed. At the same time larger units for use in industry and heating were designed and manufactured. Demand for anthracite grew and the industry and the region prospered. The smokeless burning, heat holding, and safe storage qualities of anthracite made it the most popular solid fuel for household purposes in its marketing area which consists principally of Northern Atlantic States, New England, and Canada.

MINING

By the time a demand for anthracite was created, sufficient veins had been located to allow production to meet the demand by digging and wedging the coal loose at places along the outcrop where the ground, or overburden, covering

it had been removed. As bad conditions or water interfered new openings would be made along this outcrop. Increased demand for anthracite caused mining methods to improve continually. Man power, mule power, steam, compressed air, and electricity were the changing energies used to keep pace with the amount of anthracite required. Explosives set off in drill holes replaced hand wedging to loosen coal from its solid position at the working face. First drilling was done by handwork, this changed to compressed-air and electric-driven drills. Movement of small mine cars by hand, changed to use of mules, then locomotives—steam, compressed air, storage battery, electric trolley. Continually improved pumps allowed mine workings to proceed downhill by removing water with hand pumping, compressed air, steam, and electricity. Compressed air, steam, and electric hoists allowed loaded mine cars to be raised up inclines (slopes) or vertically (shafts). Undercutters to take a bottom slice from thin veins allowed a change in blasting which made mining thin veins economically possible.

Basically the mining of anthracite coal consists of loosening coal from the solid at any working point by drilling, cutting and blasting in line with the best practice known for the condition existing at the specific point at that time, and loading out the loose coal and transporting it to the surface by the best known methods of that period.

PREPARATION

Anthracite burns most satisfactorily and efficiently when the pieces burned at the same time are fairly uniform in size and when the impurities (materials other than coal such as slate and "bone") are held to a reasonable minimum. The sizes of anthracite usually prepared for market are egg, stove, chestnut, pea, buckwheat, rice, and barley. These sizes can be reasonably well pictured from their descriptive names. From the start of selling anthracite it was necessary to break the large pieces in the raw coal as it came from the mine (run-of-mine) to pieces no larger than the largest salable size at the time. This breaking was originally done by hand and later by mechanical means, the latest being rolls with cracking teeth set in them. In order to separate the sizes, screens and perforated sheet iron called jackets were used. As the industry developed, buildings were erected to hold the breaking and screening equipment. These buildings became known as "breakers" and are so called to this day. Removal of impurities from the run of the mine was originally done by hand by employees known as slate pickers. A modern breaker of today does all these processes of breaking, screening, and cleaning mechanically and with a small work force compared to the old handwork methods.

Producers of anthracite, with a few exceptions, take pride in the quality of their finished product as it leaves for market. Sizing, amount of impurities, percentage of ash, heat value, and appearance are all taken into consideration. the law of Pennsylvania provides certain standards which must be met for each size of anthracite in order to allow its sale as standard anthracite. Any anthracite not meeting these standards may not be sold as standard anthracite under penalty of the State law. Some producers set standards for their product which are more strict than those provided by the act. Policing of quality of product ready for market is done by inspectors hired by each company. Their tests are subject to check by representatives of the anthracite committee which has power to police the Standard Act.

SALES

In spite of the desirable qualities of anthracite its sale has almost always been a problem. This has been due to a tendency of the industry to overproduce, and the competition of other fuels on a cost basis or on a convenience basis. Practically the only periods this sales problem did not exist were during wars or during strikes which created a temporary shortage of fuels. The more difficult mining conditions in anthracite and the continual requirement of sizing and cleaning it prior to selling have always made anthracite more expensive to prepare for market than bituminous (soft) coal. The fact that it is a solid fuel which produces a solid ash in burning has made it less convenient, in the eyes of the consumer, than competing liquid and gaseous fuels.

The above factors have caused pronounced problems in the anthracite industry. The difficulty has been to produce a quantity of each size that the market will absorb at a cost lower than the average price that can be obtained at the time. Anthracite producers have tried many times to agree among themselves on increasing and decreasing tonnage produced to match the sales poten-

tials. The most recent program, still in use, is with State participation under an act providing for the Department of Commerce to administer voluntary plans to control the output of mineral resource industries located preponderantly within the Commonwealth.

TRANSPORTATION TO MARKET

No story of anthracite in Pennsylvania would be complete without mention of the problems that arose and were solved in getting it to market. The ultimate construction of the present railroad systems in the producing region had the final sway in the region's prosperity and in its great value to the State and the Nation because of anthracite and other traffic.

After anthracite had been discovered and a satisfactory method to use it had been developed the problem of transporting it from the hills in which it was mined to market arose. Small quantities could be taken by wagon, but at great expense. Larger quantities could be shipped by arks on the rivers, but the rapids caused great loss in this method. Canals were constructed, usually along rivers, to provide safer shipment, in larger quantities by canal boats to destinations or to navigable waters. The coal was taken over the hills, when necessary, from the producing region to the canals by small coal carrying cars running on narrow tracks. The cars were pulled up grades by ropes operated by steam hoists, and were run down grades by gravity, controlling the speed with brakes.

This use of rope and gravity haulage, canals and navigable waterways continued until the steam-driven locomotive was developed and the present railroad networks started spreading through the region. Anthracite is loaded on railroads owned by mine companies. These are the Reading; Lehigh Valley; Delaware; Lackawanna & Western; Delaware & Hudson; Pennsylvania; Erie; Central of New Jersey; Lehigh & New England; New York; Ontario & Western. Steam-driven locomotives have been replaced by the presently modern diesel locomotives.

SAFETY

As the mining of anthracite expanded, and more areas were opened to greater extent and depths, problems affecting the safety of the workmen arose. Hazards were presented by: falls of top rock or coal faces; presence of gases both explosives and suffocating; improper use of explosives; and sudden inrushes of underground water which caused accidents and in some instances catastrophes. As the accident problem in the anthracite grew the Pennsylvania legislation enacted laws and provided for their policing. The present anthracite mining laws of Pennsylvania in their original form were enacted June 2, 1891. The present policing of this act and its amendments by the department of mines was established April 14, 1903, superseding the bureau of mines which had been in the department of internal affairs.

The head of the department of mines is the secretary of mines who is appointed by the governor by and with the advice and consent of the senate, serves for 4 years and until his successor shall have been appointed and qualified. The department and the secretary are charged with the supervision of the execution of the mining laws of the Commonwealth. Under the secretary in anthracite there are two field deputy secretaries and 21 mine inspectors, who are responsible for administering the provisions of the anthracite mine laws of Pennsylvania.

Most responsible producers of anthracite today have their own safety organizations which follow all known methods of promoting safety on the part of all employees. These methods include safety inspections, first-aid and safety training programs, safety meetings and safety awards. In many cases the company safety rules are of even greater detail than the provisions of the State act.

The progress in safety is shown by stating that in 1891 the anthracite industry produced 116,125 tons per fatal accident and in 1954 it produced 555,191 tons per fatal accident.

LABOR RELATIONS

First organization of labor in the anthracite region was by the Bates Union in the Schuylkill field in 1848. Scattered efforts were made to organize labor in the industry from then until 1897 without too much success. In 1897 the United Mine Workers of America under the leadership of John Mitchell started

to organize throughout the region. By 1900 they had sufficient control to govern the instituting of a new contract with the operators.

In 1902 the mine workers and the anthracite operators were unable to agree on terms of a new contract and a general strike which lasted 165 days occurred. The strike ended with the men returning to work pending the award of a commission, known as the Anthracite Coal Strike Commission, appointed by President Theodore Roosevelt. The award of this commission has been the base of the agreements between the United Mine Workers of America and the anthracite operators to this date. The matter of handling the adjustment of grievances provided for in it has been used in many other places.

Several strikes have occurred since 1902. The longest of these were the 1922 strike, lasting 163 days, and the 1925–1926 strike, lasting 170 days.

John L. Lewis became president of the United Mine Workers in 1919, and has led them ever since that time.

Present relations between the mine workers and the anthracite operators appear to be good.

GENERAL

Anthracite coal has been the main factor of the development and growth of its producing region. It has given employment not only to those engaged in mining, preparing and selling it, but to the people required to transport it to the market, those selling supplies and materials to the industry, and to employees in stores, banks and other enterprises common in prospering communities. The railroads built primarily to carry anthracite now service the diversified industries brought into the area by its anthracite prosperity. Availability of female labor added to the trend of incoming industry.

Anthracite production reached an annual peak of 100 million tons in the year 1917. Employment in anthracite reached a peak of 180,000 in 1914. Approximately 5 billion tons of anthracite have been mined in Pennsylvania to date.

LOOKING AHEAD

Anthracite production in Pennsylvania during 1954 was 26 million tons. While this figure is down from the peak year of 1917 it is still indicative of a big industry, of a large turnover of money and of great value to the economy of the Commonwealth and the Nation. The greatest part of the cost of producing anthracite is labor. This labor is accustomed to psending its income freely, which produces good business conditions in the area.

Specialists in making energy requirement forecasts for the Nation state that they expect a tremendous increase in demand for total energy during the next 10 to 20 years. This energy is provided by coal, oil, gas, waterpower and atomic reaction. The same specialists forecast a continuing increase in use of oil and gas during the next few years but a decrease in their availability after approximately 10 years. They do not believe atomic reactors will be in a position to produce energy as rapidly as oil and gas production decreases. Therefore, they expect coal will again be called upon to fill in the gap. It is true that bituminous coal would be expected to meet the required demand, but anthracite can obtain its proper share by continual efforts in research to find more and better ways for its use, and to reduce the cost of production which will bring its price potential more closely in line with that of bituminous coal.

Anthracite has always been called upon to provide extra tonnage during national emergencies. At present, mines are closing due to shrinking demand for the product. Pumps are being removed from the closed mines. If the industry is to be able to assist in future national emergencies on short notice, it will be necessary for State, Federal or other aid to provide relief from the present underground water situation.

Mr. EDMONDSON. Thank you very much, Mr. Kennedy, for a very fine statement. We certainly will want the list of anthracite research possibilities which your Pennsylvania State University has prepared. If you would submit it to us, we would like very much to have it as part of our own materials on the subject.

Mr. KENNEDY. I will be glad to cooperate.

Mr. EDMONDSON. Mr. Aspinall.

Mr. ASPINALL. I join with you, Mr. Chairman, in complimenting Mr. Kennedy upon a fine statement, supplementing the statements

that were made by representatives from industry in Washington when we had our first hearing in the Capital.

Mr. Kennedy, could you answer the question that I have asked heretofore today as to about what percentage of Pennsylvania's economy depends upon the coal industry?

Mr. KENNEDY. No, I could not give you specific figures, except to say that the coal industries in Pennsylvania are the basic industries, and all other industries in Pennsylvania depend upon the coal industry.

Mr. ASPINALL. Of course, the reason that question is asked is that I think it is fundamental to my next question, which you have partly answered in your presentation. That question is: Do you think that the State of Pennsylvania at the present time is accepting as much obligation in trying to take care of research work in this field as it should, or as it could, from its tax moneys? That is what I have in mind, because I think you realize that many on the committee feel that this is a cooperative undertaking. If the Federal Government comes in, we wish to be sure that the State governments are accepting their responsibility, and then that the local interests, including the operating interests as well as the community interests, are accepting their responsibility in such a program.

Do you feel that Pennsylvania has done all that it could do up to the present time? Or do you feel like your statement suggests—that you should do more and that Pennsylvania can do more?

Mr. KENNEDY. Congressman, in answer to your first question, I will be glad to get that specific information for you from our Department of Internal Affairs and forward it to you.

Mr. ASPINALL. With that understanding, Mr. Chairman, I would ask it be made a part of the record at this place.

Mr. EDMONDSON. Is there objection?

Without objection, it is so ordered.

(The information follows:)

COMMONWEALTH OF PENNSYLVANIA,
DEPARTMENT OF MINES,
Harrisburg, April 3, 1957.

Mr. GEORGE H. SOULE, Jr.,
Staff Consultant on Mining, Minerals, and Public Lands,
Committee on Internal and Insular Affairs,
House Office Building, Washington, D. C.

DEAR MR. SOULE: At the hearing of the congressional Committee on Coal Research held in Wilkes-Barre on February 22, 1957, I was requested to forward to the headquarters of the committee at Washington the following additional information:

1. A list of suggested research projects relative to anthracite, which had been prepared by the Pennsylvania State University.

2. Tabulated data on production, employees, and accidents in the bituminous-coal division starting from the year 1877, as taken from the annual report of the department.

3. An informative figure indicative of the percent that the coal industry represents out of the total economy of the State.

I am enclosing 10 copies of the information outlined under 1 and 2.

It has been rather difficult to obtain data from which to reach a definite figure relative to item 3. However, I have been advised by the department of labor and industry that, of the productive industries in Pennsylvania, which include manufacturing and mining, mining payrolls amounted to an average of 5.8 percent of the total pertinent payrolls during the 4-year period 1953–56. This percentage amounted to a payroll of nearly $400 million per year.

I regret that it has taken so much time to accumulate this information and forward it to you. I hope it fulfills your requirements. I will be glad to submit additional data upon receipt of request from you.

Yours very truly,

JOSEPH T. KENNEDY,
Secretary of Mines and Mineral Industries.

(Enclosure 1)

COMMONWEALTH OF PENNSYLVANIA, DEPARTMENT OF MINES

BITUMINOUS COAL REGION

Production, employees, fatalities, 1877 to 1955

Year	Production (net tons) [1]	Stripping production	Employees	Fatalities	Production per fatality	Fatalities per 1,000 employees	Fatalities per 1,000,000 tons produced	Number of inspectors
1877	1,305,932		16,627	13	100,456	0.78	9.95	3
1878	12,500,741		25,787	48	260,432	1.86	3.84	3
1879	14,341,360		27,286	55	242,570	2.01	3.82	3
1880	16,564,440		33,391	48	345,092	1.43	2.90	3
1881	15,916,123		35,530	57	279,230	1.60	3.58	4
1882	20,694,110		42,393	94	220,150	2.22	4.54	4
1883	18,729,817		35,091	54	346,848	1.54	5.02	6
1884	20,553,090		39,904	105	195,744	2.63	5.11	6
1885	23,413,692		44,145	83	282,092	1.88	3.54	8
1886	27,107,173		52,364	74	366,313	1.41	2.73	8
1887	29,966,855		57,868	84	356,748	2.14	2.80	8
1888	33,772,286		61,565	90	375,248	1.46	2.66	8
1889	34,625,054		62,084	105	329,762	1.69	3.03	8
1890	40,884,103		67,383	146	273,179	2.17	3.57	8
1891	41,805,642		74,135	237	176,395	3.20	5.67	8
1892	46,581,575		78,805	134	347,623	1.70	2.88	8
1893	43,421,898		81,872	131	334,015	1.60	3.02	10
1894	39,800,210		86,118	123	320,969	1.50	3.09	10
1895	51,818,112		84,976	156	332,167	1.84	3.01	10
1896	50,284,692		83,801	180	279,359	2.15	3.58	10
1897	54,625,272		86,553	150	364,168	1.73	2.75	10
1898	64,247,665		87,803	200	321,238	2.28	3.11	10
1899	73,066,945		91,505	258	283,205	2.82	3.53	10
1900	79,318,362		108,735	265	299,315	2.44	3.34	10
1901	80,914,236		117,501	301	268,818	2.56	3.72	12
1902	98,529,122		135,611	456	216,072	3.36	4.63	12
1903	103,713,982		151,745	402	257,995	2.65	3.83	15
1904	99,600,167		155,747	536	185,821	3.44	5.38	15
1905	119,361,514		164,941	479	249,189	2.90	4.01	16
1906	129,532,989		172,928	477	271,557	2.76	3.68	18
1907	149,559,047		183,121	806	185,557	4.40	5.59	20
1908	114,937,375		181,840	572	200,939	3.15	4.98	20
1909	136,205,695		185,921	506	269,181	2.72	3.71	21
1910	148,770,858		193,488	539	276,013	2.79	3.62	21
1911	142,189,329		182,653	515	276,096	2.82	3.62	25
1912	160,830,492		182,642	446	360,606	2.44	2.77	26
1913	172,965,659		189,909	611	283,086	3.22	3.53	28
1914	145,884,530		196,038	413	353,231	2.11	2.83	28
1915	157,420,068		187,734	442	356,154	2.35	2.81	30
1916	169,123,814		174,304	436	387,899	2.50	2.58	30
1917	171,074,411		186,586	494	346,304	2.65	2.89	30
1918	177,217,294		181,678	494	358,739	2.72	2.79	30
1919	147,085,781		180,831	401	366,797	2.22	2.73	30
1920	166,929,002		184,168	424	393,700	2.30	2.54	30
1921	114,447,134		200,419	284	402,983	1.42	2.48	30
1922	108,310,046		194,630	424	255,448	2.18	3.91	30
1923	169,181,137		200,538	401	421,898	2.00	2.37	30
1924	128,751,028		174,469	345	373,191	1.98	2.68	30
1925	135,266,612		165,586	312	433,547	1.88	2.31	30
1926	151,746,464		164,782	421	360,443	2.55	2.77	30
1927	131,644,922		158,204	355	370,831	2.24	2.70	30
1928	129,846,153		137,944	508	255,603	3.68	3.91	30
1929	142,351,359		135,272	378	376,591	2.79	2.66	30
1930	123,417,850		133,703	296	416,952	2.21	2.40	30
1931	96,846,250		119,265	207	467,856	1.74	2.14	30
1932	74,162,485		106,597	155	478,468	1.45	2.09	30
1933	78,511,864		116,917	135	581,569	1.15	1.72	26
1934	89,592,481		127,868	156	574,312	1.22	1.74	26
1935	91,140,273		129,350	161	566,089	1.24	1.77	26
1936	108,964,865		133,914	190	573,499	1.42	1.74	26

Production, employees, fatalities, 1877 to 1955—Continued

Year	Production (net tons) [1]	Stripping production	Employees	Fatalities	Production per fatality	Fatalities per 1,000 employees	Fatalities per 1,000,000 tons produced	Number of inspectors
1937	110,417,947	----------	133,487	186	593,645	1.39	1.68	25
1938	76,881,944	----------	115,347	119	646,066	1.03	1.55	25
1939	89,397,222	2,792,966	117,959	120	744,977	1.02	1.34	25
1940	111,416,916	2,808,607	117,832	188	592,643	1.60	1.68	25
1941	127,469,207	6,479,220	124,921	166	767,887	1.32	1.29	23
1942	142,759,563	10,303,160	117,481	187	763,420	1.50	1.30	27
1943	139,801,363	17,177,054	105,903	178	785,400	1.68	1.27	26
1944	144,408,418	22,211,661	99 942	164	880,539	1.64	1.14	25
1945	130,696,854	26,675,095	98,764	140	933,538	1.42	1.08	27
1946	123,587,065	31,047,425	103,894	128	965,524	1.23	1.04	27
1947	144,761,964	35,946,734	109,202	132	1,096,681	1.21	.92	27
1948	130,627,789	33,483,099	110,327	114	1,145,857	1.04	.87	27
1949	87,351,892	21,326,389	100,119	65	1,343,875	.64	.74	29
1950	103,439,887	25,460,343	94,514	83	1,246,264	.88	.80	29
1951	106,680,007	22,688,543	86,369	70	1,524,001	.81	.66	28
1952	87,308,999	19,462,498	76,676	62	1,408,210	.81	.71	30
1953	91,938,156	19,538,037	69,126	67	1,372,211	.97	.73	30
1954	70,823,985	16,954,885	55,405	44	1,609,636	.80	.63	29
1955 [2]	85,042,677	19,212,869	52,103	48	1,771,722	.92	.56	27
1956 [3]	87,500,000	20,849,025	54,200	51	1,715,686	.94	.58	26

[1] Includes stripping production.
[2] In 1955, for the 1st time in the history of the Pennsylvania Department of Mines, the production, employees, and fatalities of deep mines employing fewer than 5 persons inside are included in the region totals.
[3] In 1956, the figures are estimated

(Enclosure 2)

Anthracite Research Projects Proposed for Investigation at the College of Mineral Industries, the Pennsylvania State University

(List prepared by coal research section, Mineral Industries Experiment Station, March 1957)

PROPOSED PROGRAMS OF RESEARCH ON ANTHRACITE

Department of mineral preparation

1. Interplant Pipeline Conveying of Anthracite and Anthracite Preparation Plant Products.
2. Anthracite Sizing by Water Currents.
3. Dewatering of Anthracite Fines.
4. Cleaning Anthracite Slurries.
5. Utilization of Preparation Plant Refuse.
6. An Evaluation of Pure Hydrocarbons for the Flotation of Anthracite.
7. Catalytic Gasification of Anthracite.
8. Cleaning of Anthracite Fines With a Belt-Type Separator.
9. Use of Surface Active Agents for the Preparation of Anthracite.
10. Cleaning Anthracite Fines in Cyclones.
11. Solid-Fluid Separations as Applied to the Prevention of Stream and Air Pollution.
12. The Recovery of Anthracite Fines From River Basins.
13. Field Studies of Efficiencies of Coal-Cleaning Plants.

Department of mining.

14. Continuous Mining Machine Development for Anthracite Mining.
15. Evaluation of the Effectiveness of Incentive Plans in Increasing Productivity.
16. Mine Operations Research.
17. The Development of Drilling and Blasting Techniques.
18. An Analysis of Roof Support Methods.
19. Improvement of Flat and Pitch Seam Mining Methods.
20. Techniques of Property Evaluation.
21. The Improvement of Mine Illumination.
22. An Analysis of the Methods in the Strip Mining of Anthracite.
23. Increasing Efficiency in Multiple Seam Mining.
24. Thin Seam Underground Mining in the Anthracite Fields.

25. Dust Control in Continuous Mining.
26. Continuous Mining in Steeply Dipping Seams.
27. Anthracite Mine Refuse Utilization.

Department of Geography

28. The Changing Importance of Mining in the Economy of the Anthracite Region.
29. Geographical Analysis of Labor in Mining in Relation to Other Economic Activities.

Department of Mineral Economics

30. Market Research on Industrial Markets for Anthracite.
31. Market Research on Residential Markets for Anthracite.
32. Market Research on Foreign Markets for Anthracite.
33. Market Research on Markets for Carbon.
34. A Study of the Economic Effect of Water Incursion on the Anthracite Industry.
35. A Study of the Economics and Future Potential of Strip Mining of Anthracite.
36. A Study of the Possibilities of Diversification in the Anthracite Industry.
37. A Study of the Pricing Problem in Anthracite.
38. A Study of Transportation Problems in Anthracite.
39. A Study of Marketing Methods in the Anthracite Industry.

Department of Mineralogy

40. The Nature of Clay Minerals in Anthracite and Anthracite Ash.
41. Variation in the Mineralogy, Crystal Chemistry, and Trace Element Composition of Pyrite from Anthracite.
42. Characterization of Anthracite Seams on the Basis of Mineralogy, Petrography and Chemical Composition.
43. Relationship of the Mineralogy and Chemistry of Anthracite Seams to that of the Overlying and Underlying Sediments.
44. Study of the Condensation of Carbonaceous Compounds Under Very High Pressures.
45. Accelerated Distillation of Wood Under High Pressures.
46. Measurement of Preferred Orientation in Micaceous Minerals in Coal as a Means of Evaluating Variation in Regional Pressure Throughout the Anthracite District.
47. Study of Authigenic Minerals in Anthracite as a Means of Evaluating the Nature of the Coal-Forming Environment.
48. Ultra Thin Section Electron Microscopy of Anthracite.

Department of fuel technology

49. Use of Anthracite in Carbon and Graphite Electrodes.
50. Production of Active Carbon From Anthracite.
51. Effect of Various Organic Binders on the Surface of Anthracite.
52. Gasification of Anthracite To Produce Carbon Monoxide and Subsequent Decomposition of Carbon Monoxide To Produce a Pure Carbon.
53. Effect of Heat Treatment on the Electronic Properties of Anthracite.
54. Effect of Heat Treatment on the Magnetic Properties of Anthracite.
55. Concentration of the Mineral Matter in the Fine Sizes of Anthracite on Grinding.
56. Production of a Carbon Black by the Fine Grinding of Anthracite.
57. Blending of Anthracite and Natural Graphite in With Bituminous Coal To Make an Improved Cupola Fuel.
58. Effect of Anthracite Structure on its Rate of Reaction With Metal Oxides and Metals.
59. Production of Boron Carbide Using Anthracite.
60. Production of Carbon Disulfide Using Anthracite.
61. Production of Aluminum Chloride Using Alumina, Chlorine and Anthracite.
62. Production of Barium Sulfide by Reacting Barium Sulfate With Anthracite.
63. Production of Calcium Carbide by Reacting Calcium Oxide With Anthracite.
64. Effect of Ultra High Pressure on the Structure of Anthracite.
65. Fine Grinding and Solubilization of Anthracite for Use as a Paint and Ink Pigment.

66. The Use of Anthracite as a Filler and Pigmentation Agent in Dark Asphaltic Type Floor Tile.
67. The Study of Anthracite Structure and Properties by Ultrasonic Techniques.
68. The Fine Grinding and Solubilization of Anthracite for Use as an Infrared Adsorber and Heat Trap.
69. Incorporation of Anthracite in Polyethylene and Polystyrene Resins as an Ultraviolet Absorber To Prevent Breakdown of the Resin by Sunlight.
70. Fine Grinding and Treatment of Anthracite for Use as a Soil Conditioner and To Speed Germination as an Infrared Absorber.
71. Use of Finely Ground Anthracite To Case-Harden Steel.
72. Use of Finely Ground Anthracite in the Production of Foundry Molds.
73. Use of Anthracite as a Foaming Agent (CO_2 Production) for the Cellulation of Glass in the Manufacture of Glass Insulation.
74. Use of Thermally Stabilized Anthracite as a Cupola Fuel.
75. Separation of Metallic Halides Produced From Anthracite Ash.
76. Reaction of Anthracite With Sulfur Dioxide.
77. Change of Surface Properties of Anthracite by Fine Grinding in Different Atmospheres.
78. The Effect of Radiation on the Physical and Chemical Properties of Anthracite.
79. The Reduction of Sulfur in Anthracite During Carbonization.
80. Effect of the Nature and Type of Binder on the Properties of Anthracite Briquettes.
81. Physical and Chemical Properties of Anthracite as Related to Carbonization.

Department of geology

82. Sulfate, Sulfide, and Organic Sulfur in Anthracite.
83. Mine Drainage as Related to Geologic Structure.
84. Trace Elements and Their Role in Geologic Correlation.
85. Trace Elements and Their Effect on the Chemistry of Ash.
86. Analysis of Coal Ash Employing X-ray Fluorescence.
87. Weathering Characteristics of Overburden.
88. The Paleobotany of the Anthracite Fields.
89. The Inorganic Constituents of Anthracite and Their Relationships to "Original Material."
90. Lateral Variation and Its Effect on Mining and Chemistry.
91. Effects of Solvents on the Maceral Types in Anthracite.
92. Stratigraphic Control of Anthracite Mining by Petrography.
93. Hardness and Friability of Anthracite.
94. The Effects of Various Etchants on the Banded Components of Anthracite.
95. Microspectrophotometry of Anthracite Macerals.
96. X-ray Shadow-Graphs of Structures in Anthracite.
97. X-ray Study of Anthracite Constituents.
98. The Thermal Behavior of Anthracite Constituents.
99. Anthracite Carbonization With Respect to Chemical Byproducts.
100. The Petrographic Blending of Anthracite in the Production of Metallurgical Coke.
101. Development of a Research and Reference Collection of Anthracite Coals.
102. The Use of Anthracite Fines in Coal Briquetting.
103. The Microscopic Study of Anthracite and Anthracite Fractions.
104. Infrared Spectra of Anthracite and Anthracite Products.
105. Preparation Characteristics (Petrographic) of Anthracite Coal Types.
106. Differential Thermal Analysis of Anthracite and Anthracite Types.

Mr. KENNEDY. In answer to the second part of your question, I will say this, Congressman: We have had a desperate fight in Pennsylvania to get recognition for the coal industry. We have had four governors who had their roots in the coal industry. We had two from western Pennsylvania in the persons of Martin and Duff. We have had two from anthracite in the persons of Fine and James. Despite the fact that the representatives of the anthracite industry and the United Mine Workers of America went to those governors repeatedly over the last 30 years and asked for help, they were never

given any recognition; and it is a sad commentary on Pennsylvania's coal industry that we had to go to a foreigner to get some consideration—the present governor..

Mr. ASPINALL. I hope the future holds more success for you in that respect.

As I understand your statement, in recent times you have had an export trade of about 2 million tons of anthracite coal a year. Is that correct?

Mr. KENNEDY. Substantially correct.

Mr. ASPINALL. Do you know where the markets are in the foreign countries for this coal?

Mr. KENNEDY. Most of that coal was sent into Canada, but recently there has been a demand for Europe. Under this program we have negotiated a contract with the Anthracite Institute, and we have sent a man over there to give us reports as to whether or not this is just a flash in the pan or whether there is a substantial permanent market in Europe, in order that the industry here can gear itself up to take care of that.

Mr. ASPINALL. Do you know who owns the ships? Or do they ply under the American flag or flags of other countries?

Mr. KENNEDY. No, sir, I cannot answer that question, except I have read generally a lot of them are chartered under Panama.

Mr. ASPINALL. Do you think that there is a possibility that some of our ships that are now in mothballs that were used in our war effort might be used and the transportation might perhaps be more economical and it would result in some benefit to the anthracite production?

Mr. KENNEDY. I sincerely believe in that, Congressman, and I know that the United Mine Workers of America joined with certain railroads and shipping companies in an effort to get ships to do that very thing.

Mr. ASPINALL. When we were in Virginia last week, we were told that bituminous areas in western Virginia had some advantage in that they had a direct short haul to the docking facilities. That same benefit would apply in this area; would it not?

Mr. KENNEDY. That is right; Philadelphia.

Mr. ASPINALL. You make a general statement, Mr. Kennedy, as I understand you, that in case of an emergency it would be necessary to have an up-to-date ready-to-produce anthracite coal industry. What prompted that statement?

Mr. KENNEDY. Congressman, if you will be indulgent with me, I would like to give you my views on that question.

Members of the Congress of the United States have access to certain information that is not available to the average citizen. It has always been my opinion that the Members of Congress are closer to the hearts of the people of this Nation than the Members of the Senate. It is frightening when you think of what is happening in the coal industry, in that the miners are not being trained to produce the coal in the event of another national emergency.

I have sat in on collective-bargaining discussions between the anthracite and bituminous operators for some 20 years, and in recent conferences I have heard enumerable operators in both the anthracite and bituminous say this: "We have difficulty getting miners."

And now the term "miners" is very loosely used. A miner is a man who works at the face of the chamber where all the dangers and difficulties exist. Within 25 feet of the place where he works 85 percent of our fatal accidents occur, and they have difficulty in persuading people in the industry to become miners and expose themselves to those dangers and difficulties.

In the last war the coal industry of this Nation produced over 600 million tons per year. They not only produced enough coal for this Nation and its industrial needs, but furnished coal to our allies, and in doing that they took a lot of coal that was easily accessible through stripping operations. They just are not going to be able to do that all the time. That coal is gone. They are going to have to go underground for production, and unless the Members of Congress do something like is suggested, you just are not going to have the people trained to go to the face and mine the coal.

There is a very, very small portion of those people available skilled to do that work. You have masons, you have timbermen, tracklayers, electricians, shaft engineers, who are regarded as important people. But I assure you that none of those people or none of the executives of the coal companies, or people like myself or representatives of the United Mine Workers would be in existence if it were not for that very, very small portion of people, those miners who do the work at the face.

Mr. EDMONDSON. Will the gentleman yield at that point?

Mr. ASPINALL. Certainly.

Mr. EDMONDSON. The witness supplied to the committee for its examination a very fine summary of total production—production from stripping and washeries; employees, and fatalities for the anthracite mining industry from 1870 to 1956. It shows a remarkable record in the industry of reducing fatalities from a really terrible figure at a point in the past to a figure less than one-tenth what it has been in times gone by. I know it is still a serious problem.

Mr. KENNEDY. That is right.

Mr. EDMONDSON. But I think the progress made in the industry is a remarkable one, and I think your mine-safety inspectors and your management and your union people have all worked together splendidly to get that job done.

Mr. FLOOD. The Chair is directing his remarks to page 1 of the exhibit and with specific attention to the column specified "Fatalities," and continuing on the second page of, from the years 1870 up to and including the year 1956.

Mr. EDMONDSON. 1956 estimated; that is correct.

I thank the gentleman for yielding to me.

(The table appears on p. 220.)

Mr. ASPINALL. In response to your statement, Mr. Kennedy, I am sure no member of this committee would take issue with you that the Members of the House of Representatives of our National Congress are closer to the people and, we believe, more sympathetic to the interests of the people.

Even with what you have suggested, though, you have not yet answered the question that was in my mind as to why the anthracite coal industry would become so much more important in case of a national emergency than it is at the present time. A preceding witness

said it would be because the coal would be needed for heating purposes. Do you have any other use in mind other than heating purposse?

Mr. KENNEDY. Congressman, there are innumerable energy-producing industries in this country that are geared to use oil, bituminous or anthracite coal. Anthracite coal is the third on the list and that is the last fuel that is called upon.

Mr. ASPINALL. In other words, what you are suggesting is that it would be a substitute for the oil that might be denied to us in case of an emergency. Is that right?

Mr. KENNEDY. That is right, sir.

Mr. ASPINALL. One other suggestion or statement, and then I am through, and that is your reference to the possibility of the scarcity of trained personnel in this field. Of course, you are talking right down the alley of those of us who come from the mineral areas of the United States. We feel the same thing about the production of the strategic and scarce metals which are necessary, and we have pled that the Government would go along with a program to make it possible to keep these open, at least open enough to provide for skilled labor. So far, we have been unsuccessful. We are meeting with opposition at the present time. So you are talking to very sympathetic members of this committee when you make reference to the need to continue skilled people in these very necessary parts of our economy.

I think that is all I have.

Mr. EDMONDSON. Mr. Saylor.

Mr. SAYLOR. Mr. Kennedy, I would like to join in the remarks of my colleagues in complimenting you on the fine statement you have made. I am sure it has raised a number of questions in the minds of the members of the committee. I will not try to take up all of them, but there are some questions that I would like to ask.

From your statement I gather that probably the all-time high in employment in the anthracite field was around 1914.

Mr. KENNEDY. Right.

Mr. SAYLOR. When 180,000 people were employed.

Mr. KENNEDY. Right.

Mr. SAYLOR. And the figures for last year were 38,000?

Mr. KENNEDY. Right, sir.

Mr. SAYLOR. For a loss in that period of years, 42 years of 142,000 miners.

Mr. KENNEDY. Right, sir.

Mr. SAYLOR. There is a drop of 75 percent in your employment and yet the tonnage figures do not quite agree with that fall-off. In other words, the tonnage in 1917 was a hundred million. That was an all-time high, 100 million tons in 1917, and it fell off to 28 million tons in 1956. Certainly there has been an increase in the per ton man production in those years, has there not?

Mr. KENNEDY. That is right, sir. That is due to mechanization underground and improvement in the equipment they are using on stripping. Time after time they go in to a mountainside and strip it and everybody thinks it is finished. The larger equipment will become available, and they will go in and strip again and get it down to a greater depth. There has been a definite trend toward stripping in the anthracite industry in recent years. The greater proportion of anthracite stripping in the last decade has been because of this available equipment.

Mr. SAYLOR. And for that reason the production per man has increased; is that correct?

Mr. KENNEDY. That is right, sir. Because of the improvement in the equipment and mechanization anthracite is about 3½ or 4 tons per day. In the bituminous, it has increased from 5 to 6 tons per day to over 10 because they can use machinery underground to better advantage in bituminous than they can in anthracite.

Mr. SAYLOR. Mr. Kennedy, I do not want to detract from the Department of Mines and Mineral Industries in Pennsylvania, because I am satisfied that as far as the State is concerned, we have the best in the country, with due deference to my colleagues that come from other States.

But I notice that from 1952 down to date, there has been a definite reduction in the number of mine fatalities. Do you feel that is directly related to the Federal mine safety bill?

Mr. KENNEDY. I sincerely believe that it has contributed, Congressman. But within the last 2 years, since this administration has had char ge of the affairs of the Pennsylvania Department of Mines, the restraint has been taken off of the mine inspectors. They are not now controlled by political expediency, nor are they pressured to a high degree by the coal companies. They are free and unfettered people. They go make their inspections and display initiative in the correction of conditions underground, knowing that when they make a decision, that is it, and they have the support of the deputy in the area in charge, and they also have the support and backing of the Harrisburg office. For that reason there has been a definite reduction in accidents within the last 2 years.

Mr. SAYLOR. Of course, the lowest number of fatalities occurred in 1953 when there were only 47 men that died.

One other question. This was raised at the other meeting we held in Pennsylvania. I think there is some question raised by the attorney general of Pennsylvania with regard to the interpretation that was to be placeed upon the research program that was established here in Pennsylvania.

Do you feel that the State of Pennsylvania would be in better shape if there were no limit on your research program, or it was not confined to pure research?

Mr. KENNEDY. Yes. We would like to be unrestrained. The Federal Bureau of Mines, for instance, had an idea about a planing equipment that could be used in the anthracite mines to sort of plane the coal off the ribs. We thought it was a very good idea and we would have liked to have cooperated with them. But the attorney general carefully read the law under which this research board was established, and he said it was impossible to do that and be in conformity with the act.

Mr. SAYLOR. I notice you stated here on page 7 that you desired the Pennsylvania program to be continued and that it be supplemented by a separate Federal program. There has been the thought in the minds of some of the members of the committee that we did not want to cause duplication, and that one of the primary purposes of a board which would be established by the Federal Government would be to see to it that there was no duplication.

Do you agree with that?

Mr. KENNEDY. Right, sir. That is the reason why I mentioned the 209 proposals that were put together by the Federal Bureau of Mines and also the 79 proposals put together by Penn State University. We would be careful to see there was no duplication of effort.

Incidentally, we have very pleasant relations with the Federal Bureau of Mines, and I think we could have their complete cooperation in seeing there was no duplication of effort.

Mr. SAYLOR. Your cooperation, of course, is not just with the research bureau in the adjoining county as far as anthracite is concerned, but generally with the inspectors; is that correct?

Mr. KENNEDY. That is correct.

Mr. SAYLOR. Thank you.

Mr. EDMONDSON. When you say, Mr. Kennedy, that you are for separate Federal and State research programs, you do not mean that you are for uncoordinated and unrelated programs, do you?

Mr. KENNEDY. No, sir.

Mr. EDMONDSON. In other words, you see the need for knowledge on the part of both sides as to what is being done and a coordination of effort wherever possible?

Mr. KENNEDY. That is right, sir. We ran into a little difficulty and a little criticism when we were setting up these contracts from unthinking people who said that we did not intend to use Pennsylvania coals for the research, that we were not going to use Pennsylvanians to do the work, and things like that. We had to try to get over those obstacles.

Mr. EDMONDSON. Mr. Metcalf.

Mr. METCALF. Mr. Chairman, first I want to reiterate the point made by my colleague from Colorado, Mr. Aspinall, that coming from a mining area, where mining is largely minerals, not coal, we have been trying to sell this proposition that our strategic minerals are an important resource and wholeheartedly agree with you on the proposition that the human resource, the skills and training of miners at the face of the mine, is one of the most important things that we have.

We must not only keep open the mine and keep it from being flooded and keep the shafts open and keep it from caving in, but we should continue to train miners who could get that ore out.

I was interested in the line of questioning Mr. Saylor pursued, because he is author of the bill to extend the Federal Coal Mine Safety Act to nonferrous mines. I am also a cosponsor of such legislation.

I conducted a hearing in the West on that question last summer.

If I may, I would like to get into the record something about your experience with the Federal Coal Mine Safety Act.

Have you found that your nonfatal injuries have decreased in the same proportion that your fatal injuries have decreased as a result of the Coal Mine Safety Act?

Mr. KENNEDY. Yes; that is our opinion. We feel that every time the Federal inspectors can make an investigation or an inspection that there is some good done to correct the conditions that exist underground.

Mr. METCALF. On your chart, you have not enumerated your experience with injuries other than fatal injuries in the coal mines. But of equal importance to the employees and to the insurance rates and all

the other mining activities are the nonfatal injuries, and you find they are going down in about the same proportion, I assume?

Mr. KENNEDY. That is right.

Mr. METCALF. You have been able to live and get along at the head of a State mining department with the Federal inspectors?

Mr. KENNEDY. That is right.

Mr. METCALF. This was a little beside the point, but it is something we are all concerned about.

I note you say you have listed 209 research possibilities, and then on page 5 you have enumerated the fields of research that you have undertaken at Pennsylvania State University. You have seven projects there. Have you publications on those seven projects or have you completed any research on them?

Mr. KENNEDY. No, Congressman; we are just in the process of consumating contracts with them on those particular items. They were the projects that were selected by the whole committee.

Mr. METCALF. I was wondering what progress had been made in each of these fields. You have just begun to issue contracts and start the projects underway?

Mr. KENNEDY. That is right, sir. But there has been some work done on those projects. Enough of it has been done by Bituminous Coal Research, by Carnegie Tech, by the Mellon Institute, and by Penn State University to indicate there is some merit to those projects. That is the reason why they were selected. But it is only in the rudimentary area of research, you might say.

Mr. SAYLOR. Will the gentleman yield?

Mr. METCALF. I will be glad to.

Mr. SAYLOR. By way of supplement, I wanted to say that Dr. Charmbury appeared in Johnstown and stated that these items that were picked out in the anthracite and bituminous fields were picked out because they were the ones in which most promise was shown that some good could be done for the industry, and that they had done some basic research and that they were now in the process of setting up the equipment in their laboratories to go into detailed research in each one of these fields.

Mr. METCALF. That clears up the question. All I wanted to know is what progress has been made and if any publications or decisions had been arrived at. It is just underway.

Mr. KENNEDY. That is right.

Mr. METCALF. I think that is all, Mr. Chairman.

Mr. EDMONDSON. Mr. Chenoweth.

Mr. CHENOWETH. Mr. Kennedy, what do you think about the future of the anthracite coal industry? Do you think it has a rosy picture ahead, or any immediate prospects for improvement?

Mr. KENNEDY. Congressman, I think it has a very definite future.

Mr. CHENOWETH. How far ahead?

Mr. KENNEDY. Depending upon what can be developed through research.

Mr. CHENOWETH. Suppose we do not have any research. Then what is the picture?

Mr. KENNEDY. Very pessimistic. The anthracite industry has been losing about 10 percent of its market each year. I guess it will go out of existence in that case.

Mr. CHENOWETH. Do you think it is going to continue to lose 10 percent? You picked up a little last year, did you not?

Mr. KENNEDY. As I explained, that was due to the cold weather and exporting.

Mr. CHENOWETH. You said you sent a man to Europe to check the export picture?

Mr. KENNEDY. That is right.

Mr. CHENOWETH. Is he back yet?

Mr. KENNEDY. No; he has sent some reports back. He is working under the jurisdiction of the anthracite industry, and I think when those people testify they can give you definite information about those reports.

Mr. CHENOWETH. Do you have the figures there for the bituminous production as compared with the anthracite? I do not know whether you have them before you or not. You gave us the figures for 1914 and 1956. Do you have those for bituminous?

Mr. KENNEDY. I do not have them here. They are in the History of Pennsylvania Bituminous Coal here, but I deliberately refrained from talking about the bituminous.

Mr. CHENOWETH. I understand that. I just wanted to compare them for curiousity.

Mr. KENNEDY. I think they are in here [indicating].

Mr. CHENOWETH. Roughly, how does anthracite compare with bituminous? What percentage? Do not bother looking it up if you do not have it there. The bituminous industry has picked up considerably in the last couple of years, has it not?

Mr. KENNEDY. That is right, sir.

Mr. ASPINALL. Will the gentleman yield?

Mr. CHENOWETH. Yes.

Mr. ASPINALL. Would not the figure be about 1 to 4 in favor of the bituminous industry with a pickup, perhaps, as 1 to 14 or 15 because of the export trade?

Mr. CHENOWETH. I do not recall they gave us the total figures in Johnstown like you have here today. This statement is very interesting, but we did not get that at Johnstown on bituminous production.

Mr. KENNEDY. We will be glad to send you that information, and it is readily available, but we did not want to burden the committee by going over ground covered in Johnstown.

Mr. EDMONDSON. If my colleagues will turn to page 63 in the little History of Pennsylvania Bituminous Coal, he will find the summary on production in relation to fatalities that has been supplied for the anthracite and will also find in the preceding pages the breakdown by counties for bituminous coal production.

Mr. CHENOWETH. This production ends as of 1954, I notice.

Mr. EDMONDSON. I think also there is a set of total figures on production beginning at about page 58, continuing from that page in accordance with the witness' statement. If you want it for questioning purposes, it is available in the booklet.

Mr. CHENOWETH. I was just curious about it. The reason I asked, apparently the bituminous people are enjoying some markets that are opening up to them which were not available before, and apparently those markets are not available to the anthracite industry. Is that correct?

Mr. KENNEDY. Well, I have heard reports—I do not know how reliable they are—that a definite interest in obtaining leases on coal lands in the northwestern part of this Commonwealth exists, for the reason that when the St. Lawrence seaway is opened, operators may have definite opportunity to ship coal from the northwestern tiers of counties to Erie and thus export it to Europe. But I have no definite information on it.

Mr. CHENOWETH. But the production is up in the Johnstown area now, I believe.

Mr. KENNEDY. Yes.

Mr. CHENOWETH. I think that is what they told us in Johnstown last week—it was up there right now.

Mr. KENNEDY. It was up there.

Mr. CHENOWETH. For the last 2 years.

Mr. KENNEDY. Yes.

Mr. CHENOWETH. And going up yet, partially due to export and partially due to the further development of the domestic market. Do you think the anthracite industry has done all it can do to develop new markets?

Mr. KENNEDY. The anthracite industry itself has conducted intensive research for quite a few years, but they were not successful in developing the thing because I do not think they have the facilities or the money to go into the thing extensively.

Mr. CHENOWETH. In other words, there are no demands for anthracite coal now over and above what is being supplied by this very reduced operation?

Mr. KENNEDY. That is right, sir.

Mr. CHENOWETH. How many days do the anthracite mines work in an average week?

Mr. KENNEDY. Because the number of mines have decreased, a lot of mines have closed down, they have been working 3 and 4 days a week, depending upon market demands.

Mr. CHENOWETH. How many anthracite mines have closed in the last 5 or 10 years, say?

Mr. KENNEDY. I do not have those figures available. I can get them for you and send them to you.

Mr. CHENOWETH. I had the impression that anthracite coal is mined more largely by the large coal operators, while bituminous has a number of small operators, wagon or truck mines. You do not have them so much in the anthracite field. Is that correct?

Mr. KENNEDY. They have quite a number of them in the southern fields, they have quite a number of small mines in the southern fields.

Mr. CHENOWETH. Anthracite fields?

Mr. KENNEDY. That is right.

Mr. CHENOWETH. Do they make a very substantial contribution to the total output or not?

Mr. KENNEDY. I guess their production would run in the neighborhood of 11 or 12 percent.

Mr. CHENOWETH. They mine coal and deliver it into the adjoining towns and cities for domestic purposes, supply the local market; is that their function?

Mr. KENNEDY. They supply the local market. They ship some into Philadelphia, some into New York.

Mr. CHENOWETH. But by and large, the output of this anthracite region is produced by the large operators?

Mr. KENNEDY. The major portion of it.

Mr. CHENOWETH. I think that is all, Mr. Chairman. Thank you.

Mr. FLOOD. If you will permit me, Mr. Chairman, with reference to the export problem, it would be interesting for the record to show that 2 years ago I attended the conference in London of the Great Britain Retail and Wholesale Coal Dealers. There is a tremendous demand for hard coal, Pennsylvania anthracite, in the British Isles, in France, and in the low countries—Holland, Luxembourg, Belgium, and so on. The problem is in the cost differential in putting a ton of Pennsylvania anthracite down dockside at Liverpool as contrasted to the local European hard coal which is not as good a quality coal as ours, but it is there at a cheaper price.

The industry has examined the idea of an export subsidy, somewhere between three and one-half and five dollars a ton to try and meet this prohibitive cost differential created by the high cost of American-flag ships' operations as compared to the operation of colliers under foreign or mixed flags.

It is interesting to observe that the United Mine Workers of America, operating under their corporate structure, with the railroads and the producers, formed a new export company specifically for colliery and exporting coal, and they have obtained agreements with the American Maritime Commission for the leasing of some 36 mothballed American ships. Two of those ships are now actually at sea with soft coal.

The hard-coal people, under a program initiated by the Hudson Coal Co., have obtained the charter rights to one ship to be used for the exclusive transport of hard coal between Philadelphia and Antwerp and Brussels, and a second one is under negotiation.

There is a great potential in those foreign areas for Pennsylvania anthracite coal, but it has difficult price differential problems.

Mr. EDMONDSON. Mr. Udall.

Mr. UDALL. I just wanted to pull a few pieces together here and see if I can get the general picture.

If this committee of Congress has to underwrite a national research program, that is a field that is nothing new. We have sponsored over the past 4 or 6 years, for example, a research program into desalting of sea water. We have got Congress to appropriate several million dollars. We are on the verge of success in that field, and that will have a tremendous impact on our country.

But, of course, the members of the committee, in order to go to bat with Dan Flood and John Saylor to put a program over, naturally have got to make out a good case. It is your feeling as a general conclusion that despite the picture of 1956, due to unusual factors, unless something is done in the field of research that the situation is going to get worse instead of better.

Is that your forecast?

Mr. KENNEDY. That is true, Congressman.

Mr. UDALL. That is your belief. Based upon what I realize is inclusive data at the moment, the very fine self-help program that Pennsylvania has underway, the indications at the moment are that there is ground for optimism and hope that research programs can pull

you out of this sick state that your industry is in and turn the tide back the other way. Is that your feeling at the moment?

Mr. KENNEDY. Congressman, my statement, while I tried to cover just the anthracite, applies to bituminous and it applies to every other form of mining in this Nation. If you are unable to do something to encourage that small group of skilled people who are responsible for recovering the ore and sending it on its way for the other people to handle, this Nation is going to have the same sort of problem that every other coal-producing nation has.

Mr. UDALL. My question is really a little different than that. I do not know that you grasp it. We have got to be able to say, not only to other people on our committee, but to the Congress, this program of coal research, if you will enact it, if you will appropriate several million dollars a year for a few years, we will produce results. Do you think we can honestly and conscientiously say that?

Mr. KENNEDY. I do.

Mr. UDALL. Based on your preliminary work in Pennsylvania?

Mr. KENNEDY. I think so.

Mr. UDALL. You do?

Mr. KENNEDY. I honestly believe it.

Mr. UDALL. Those are, I think, some of the big things we are trying to keep our eye on.

I have one other statement I wanted to make. I am not, perhaps, entirely serious on this. But one of the big arguments we have had in Congress during the past Congress and this one, also, is over the regulation of natural gas which, of course, has displaced coal. I notice that lately the chairman of our committee or at least some of the spokesmen from his area are saying, if we do not repeal Federal control of natural-gas production, a lot of the market will not get gas, they are not going to get the gas out, they are going to store it or go into other fields.

In that event, if that is done, maybe you will find yourself back in business.

But that is something we will argue about on the way back to Washington, because it is a very lively topic, I assure you, in Congress.

Mr. Chairman, with the unfortunate interlude, I will yield back.

Mr. EDMONDSON. In order to complete the statistical presentation that has been made by this witness, who has supplied the committee some very fine material, there is a series of tables, beginning at page 58 in the booklet History of Pennsylvania Bituminous Coal, dated 1955, continuing to page 66, which gives the same material regarding bituminous coal production and coke and fatalities in production that previously had been supplied for anthracite.

There also has been supplied to the committee a very fine summary entitled "Pennsylvania Anthracite Coal, Introduction, Occurrence" and so forth, which summarizes the basic information regarding geographic location on coal. This was also supplied by this witness.

I would like to ask unanimous consent that both of these pieces of evidence be made a part of the record at the conclusion of this witness' testimony, and the remainder of the book History of Pennsylvania Bituminous Coal, I would like to ask be made a part of the file.

(COMMITTEE NOTE.—See p. 222 for material inserted in the record.)

Mr. SAYLOR. Mr. Chairman, reserving the right to object, but I do not intend to object; the only thing I would ask Mr. Kennedy to do

is to bring the figures for bituminous production up to 1956, the ones that are in this little folder being up to 1954. If he would supply those facts to the committee, I would be only too happy to have it made a part of the record.

Mr. KENNEDY. We will be glad to do that. We had this prepared since we have been in Harrisburg and did not have a chance to have it brought up to date.

Mr. EDMONDSON. I want to thank the witness.

Mr. Lambert, did you have anything you cared to add.

Mr. LAMBERT. No; I have nothing to add. I helped to compile the information and was available in case there were any specific questions on which I could be helpful.

Mr. EDMONDSON. You have given us some very fine material, and we appreciate your contribution here today.

Mr. FLOOD. May I suggest that the technical witnesses would submit in due course a short biographical sketch of their experience and qualifications and abilities in this line, these witnesses and others who would be classified as technical, perhaps.

Mr. EDMONDSON. If there are any who care to do so, I think we would be very happy to have the information.

We will have our next witness.

(Discussion off the record.)

Mr. FLOOD. Mr. Chairman, I would like the committee to be sure to understand that we in the hard-coal field want to make it very clear we appreciate the legislation and appropriations that have been made, the legislation through your committee and the Appropriations Committee, down through the years, in behalf of the hard-coal industry. Under no circumstances do we take the position that we have been ignored from the dawn of American history by your distinguished committees. Quite the contrary is the case. We are aware of the great work you have done for us, and the great studies you have made in our behalf in the mine safety provisions in the creation in 1945 of the Anthracite Institute, the construction of the Anthracite Institute, the legislation and appropriations made annually in its behalf, the staffing and experimentation, the so-called mine drainage bill of 2 years ago, and kindred legislation down through the years, which has evidenced your concern with the anthracite industry. We look upon this now as a continued and perhaps a greater interest in behalf of industry.

Mr. EDMONDSON. I might say at this point that, while some of us also represent districts with large oil and gas deposits, I think every member of this committee represents a State that has great coal reserves, and each State is interested in seeing those coal reserves fully developed.

My own State's coal reserves, unless I am mistaken in the figures, have been estimated at in excess of 60 billion tons, which is a sizable amount of coal to be interested in for the future from Oklahoma's standpoint, too. So we share the concern that Pennsylvania has in the problem.

Mr. FLOOD. I would like to make this additional observation, Mr. Chairman: In connection with the sociological-economic development of this hearing, you are aware that there is in the Senate and in the House legislation having to do with the redevelopment of further

development and aid to so-called distressed economic areas, or areas of unemployment, of surplus male labor.

The President has indicated his concern with such a program of legislation, such a law; both great political parties at their last national conventions in their platforms indicated their concern with legislation of that general nature, not dealing just with the coalfields, but with distressed economic areas generally throughout the Nation. On both sides of the aisle Members of the Senate and Members of the House have introduced that legislation in this very session, and we look for its consideration by the Banking and Currency Committee of both Houses very immediately, and that will contribute, with your help, to the sociological-economic problems.

Mr. UDALL. Will the gentleman yield?

Mr. FLOOD. Yes.

Mr. UDALL. I might say that Congressman Metcalf commented to me a few moments ago that if we were doing nothing else here, we were certainly building a very convincing record for that legislation, and these other committees might very well look at the record that has been painted here today in order to point up the necessity for such a program.

Mr. EDMONDSON. Mr. Kennedy and Mr. Lambert we thank you very much for your testimony here, and we will let our witnesses start testifying again now.

Mr. FLOOD. Mr. Chairman, the next witness was to be Hugh O. Tompkins, chairman of the Anthracite Industry Public Relations Council and managing director of the Fuel Merchants Association of New Jersey. Mr. Tompkins was unavoidably detained and has a statement to submit for the record. He represents a very important segment of this industry which has to do with merchandising and advertising and public information.

Mr. JILLSON. Mr. Chairman, I have Mr. Tompkins' written statement here.

Mr. EDMONDSON. State your name, sir.

Mr. JILLSON. J. D. Jillson, of the Anthracite Institute.

Mr. EDMONDSON. Would you like to take the stand and read the statement?

Mr. JILLSON. Whichever you prefer. Mr. Tompkins asked me to present it. I am not qualified to speak for his organization, but I was either to present the written statement for inclusion in the record, or read it, according to your preference.

Mr. EDMONDSON. Would you be prepared to answer questions concerning it?

Mr. JILLSON. No, sir.

Mr. EDMONDSON. Then we will let you submit it for the record, and if there is no objection, it will be made a part of the record at this point.

Thank you very much.

(The statement follows:)

STATEMENT BY HUGH O. TOMPKINS, CHAIRMAN, ANTHRACITE INDUSTRY PUBLIC RELATIONS COUNCIL, NEW YORK, N. Y.

My name is Hugh O. Tompkins. I live in New Jersey and have been the managing director of the Fuel Merchants Association of New Jersey for the past 18 years. I am also the current chairman of the Anthracite Public Relations Council. This council is comprised of representatives from the various retail

solid fuel organizations throughout the east and representatives from certain producing companies who jointly contribute to the funds now being utilized by this council. The chief activity of this council is to promote the use of anthracite coal at both commercial and domestic levels—to encourage the use of solid fuel as a modern fuel and overcome some of the derogatory misconceptions that have grown up in the public mind concerning our product during the past two decades.

Some of our activities are developed toward product promotion at retail dealer level and through various channels of publicity and work with the dealers to encourage a more optimistic climate in which our fuel can be sold.

During the past 3½ years nearly 1,000 retail dealers in the eastern markets have contributed approximately $125,000 toward this program. It constitutes, I believe, a most unusual situation where retail dealers are voluntarily contributing to an overall industry program.

It is the opinion of many retail dealers that a great deal of additional research work is needed to improve present house heating equipment as well as to develop better units for commercial and industrial jobs. It is also our opinion as a retail group that new uses for anthracite should constantly be searched for. It has been apparent to us for some time that there is a market for anthracite in the metallurgical field, and this is certainly a desirable market to cultivate. However, it is the feeling of our retail dealer group that there is an urgent need for further development of anthracite heating equipment at both domestic and commercial levels to further increase convenience to the consumer and thus enlarge the present space heating market. It appears vitally important to us that additional Federal funds be allocated to research in our industry and that it be done forthrightly.

Mr. FLOOD. The next witness is Mr. F. W. Earnest, Jr., president of the Anthracite Institute. The Anthracite Institute is an organization functioning for the producers of anthracite coal in the entire anthracite area of the State. The headquarters for this organization is in the city of Wilkes-Barre and Mr. Earnest has been its president for some time, and now will speak.

Mr. EDMONDSON. Mr. Earnest, if you are as well acquainted with the details of the anthracite industry as you were with representatives of that industry when you introduced them at noon today, we know you will have a great contribution to make here.

Mr. ASPINALL. Mr. Chairman, if the chairman will permit, Mr. Earnest has already appeared before this committee and gave us some rather valuable information in his first appearance.

Mr. EDMONDSON. I will agree that his previous appearance was an impressive one also.

STATEMENT OF FRANK W. EARNEST, JR., PRESIDENT, ANTHRACITE INSTITUTE, WILKES-BARRE, PA.

Mr. EARNEST. Thank you, Mr. Chairman, and members of the committee.

As I said to someone when they remarked about my knowing all of these names, I work for a number of those gentlemen and I would not want to miss any of those names.

When I appeared before the committee on June 6, I think, of last year, I outlined at that time the research work that had been done by our industry over a period of years, and outlined what I thought the type of research is that should be followed under the new program.

I think my chief reason in asking to appear here today is to establish 1 or 2 points, especially in view of the Suez and Middle East disturbance, which I think high-spots the importance of natural resources to the Congress and to the whole Nation.

I made the statement, I believe, in Washington—I repeat it again—that with the tremendous coal reserves in the United States, both bituminous and anthracite, there is enough fuel energy to last for hundreds of years if enough is done on research on synthesis so that the public can have the type of fuel in the form in which it desires it.

On the other hand, following what Mr. Kennedy so aptly stated here, that cannot be done if the mines are allowed to come into disuse, or unless there is something done about the manpower situation.

I will not go into the figures which have been stated by Mr. Kennedy, only to substantiate that this industry did have an increase of about 7 percent in production, but that was due entirely to export and to the colder winter last year.

I could not help but think that perhaps this committee in hearing some of the testimony, if the questions were not answered properly, might think that this industry was caught with its pants down to go into such a tailspin as it did in the last few years.

Our production during the war was up to 60 million tons. Then we dropped down, and it is now last year 27 million tons. I just wanted to point out to this committee what happened.

We never anticipated this imported oil situation. I do not want to get into that because I really could speak freely on that for a couple of hours.

Mr. SAYLOR. Mr. Chairman, as far as I am concerned, the gentleman can go ahead and talk for the next 2 hours.

Mr. EDMONDSON. Mr. Earnest, I might say in response that you have a lot of amens from this committee on anything you have to say along that line.

Mr. EARNEST. I will only just briefly cover the high spots.

But this question of bringing in Venezuelan oil and Middle Eastern oil has destroyed the whole relationship of supply and demand and, therefore, destroyed the relationship of fuel prices in the United States. Then that was enough by itself—and I will get off that subject, except I am against it. Many hearings are being held on it now.

There is the fear that with all these new and larger tankers being built after the Middle Eastern emergency, if it is ever over, they will come back to haunt us and bring more oil into this country.

Then we have the natural gas. No one anticipated the natural gas expansion. Our business was primarily, 70 percent roughly, in the home heating market, and 30 percent in the commercial market.

While I am supposed to defend our own industry, and admit that, at the same time I think it is a fair statement that no industry was ever subjected to the terrific amount of overnight competition that the anthracite industry had to experience.

That points out the necessity of research to find other uses for anthracite.

If this is going to continue in oil and gas, we cannot hope to expect to regain the home heating market. Mr. Kennedy covered that. He thought the outlook was black unless we can find new markets, and I certainly agree with that statement.

But through research through metallurgical uses—and you have to remember here—I point out to you even though you are familiar with it—we are dealing here with pure carbon, practically pure carbon, which is entirely different than bituminous; and also that we have a fuel that can be used in blast furnaces to supplement the shortage of

coking bituminous coals. But the steel industry is not going to pick that up over night as long as the coke is available.

So some day the tremendous reserves of anthracite are going to be valuable to this Nation, extremely valuable. So research can move that along. It is moving along in a small way now at the Schuylkill Haven Laboratory, and I want to speak on that in a minute.

Then through the development of synthesis fuel. There is a big field there.

Manpower has been covered pretty well this morning, but I would like to just add another statement.

Why are not the men coming in the market? I think there are a number of reasons, many of them mentioned.

Certainly one of them, you see all of the collieries closing. That is discouraging to the young man. The father did not want him to go under the conditions he operated under, and with the publicity to show factually the industry is going down hill, there is not any incentive to do it.

I am one who believes that if we had some optimistic note in some way we would solve our manpower situation. So I think it gets back overall to a Federal research program.

In that connection, I want to give credit to the Commonwealth of Pennsylvania for what they have started on their $500,000, and I give credit to the secretary of mines for his work on it, as well as the Governor and every else.

But I would like to respectfully suggest to this committee that a research program on a natural fuel or a natural resource is a Federal matter, in my opinion, not a State matter. I think the public is going to look to the Federal Government if we are caught short with natural resources, not to the State.

As far as anthracite is concerned, if you put it at State level, irrespective of whether the State has done as much as it should have done in the past, the State cannot possibly match funds. That is my personal opinion. I think it has to be a substantial Federal program in the overall interest of the Nation insofar as its natural resources are concerned.

I made the statement in Washington, and I repeat it again—it is not a figure just pulled out of the air—I recommended a $2 million program over a 5-year term. That is $10 million. That, is my opinion, should be minimum.

In the olden days, when we were working on research for domestic home heating, we had our laboratory on $200,000 a year, which was ample. We never expected to be in this condition of competition, particularly of the imported oil. Now we have to look to the metallurgical field, the gassification.

Mr. EDMONDSON. Would you pause at that moment for clarification?

Mr. EARNEST. Yes.

Mr. EDMONDSON. Was your recommendation on the $2 million a year a figure for coal as a whole or anthracite alone?

Mr. EARNEST. Just anthracite alone.

Mr. EDMONDSON. Thank you, sir.

Mr. EARNEST. When we were working only on domestic heating, that was simple. Now you have pilot plants to build, you have the

job of the whole metallurgical field, or perhaps actual blast furnaces have to be developed.

On that work I want to give credit, so far as the industry is concerned, for the job, I think, is being done at Schuylkill Haven Laboratory. I think they are showing courage. I think they have the ideas, but not the money. For a long time they had a nice building and just enough money to pay for overhead. Now they have, I believe, around $400,000 a year. You cannot do much research with that. So again, I say that it is a matter of a substantial amount of money for research.

Then the only other comment I have in general and I think it is in my prepared statement—Mr. Chairman. I ask it be filed because I am not following it. I raised this question, which gets back to the whole question of Congress and its attitude on the natural resources. I am referring to Congress as a whole and not to this committee.

Just what would the have-not nations pay for an industry in being as the anthracite industry is today with its preparation facilities, its trained personnel including the mineworkers, and executives?

When you look at all the publicity we have all seen for weeks now about the 500,000 barrels per day shortage of oil in Europe, it just so happens that while some people may think that the anthracite industry is small—it is by comparison with bituminous—our daily productive capacity is just about the equivalent of 500,000 barrels of oil a day, on the rough figure of 4 barrels equaling a ton of coal. So that we are producing enough energy every day to take care of the entire European oil shortage.

Mr. ASPINALL. You are talking in terms of B. t. u.'s?

Mr. EARNEST. Yes, sir, equivalent.

So that again, if those nations—and I heard Mr. Lewis speak last week of the rundown condition of the mines in Europe, and what they have not done. But in England or France, what would they pay for the anthracite industry as a going business today? It would be tremendous.

Therefore, I make a final point: That if we can—you gentlemen agree that it is necessary—achieve a substantial program for research, I think it is the one salvation of this industry.

I will answer a question that was asked, and maybe you will ask it of me anyway. How do we expect to produce results overnight? There is every indication it would from what has been done. The coal companies certainly cannot finance it. I know that. I do not believe the State can. I am speaking for the State, but it does not seem to me that you could have substantial amounts like that at this time.

So I say, in conclusion, I hope you will seriously consider it as a Federal project.

That is all I have.

Mr. EDMONDSON. Thank you very much. Without objection the statement filed by Mr. Earnest will be made a part of the record as though read at the start of his testimony here.

(Mr. Earnest's statement is as follows:)

STATEMENT BY FRANK W. EARNEST, JR., PRESIDENT, ANTHRACITE INSTITUTE, WILKES-BARRE, PA.

My name is Frank W. Earnest, Jr. I am a resident of Wilkes-Barre, Pa., and president of Anthracite Institute, an organization representing companies producing more than 80 percent of the total anthracite mined in this country.

When I appeared before this committee on June 6, 1956, I outlined the history of research in the anthracite industry, the urgent need for expanded research, the type of research required, and the reasons why, in our opinion, an expanded research program on anthracite is properly within the province of the Federal Government.

Since that time history-making world events, particularly in the Suez and Middle East areas, have emphasized the importance of this Nation maintaining its energy resource industries in a healthy state. If we do, we shall always have the ability to meet our energy requirements, regardless of world affairs or the whims of a power-drunk dictator.

This Nation has it within its own power through its great coal resources, to insure that all energy requirements, for liquid, gaseous, or solid fuels, can be met for hundreds of years, without dependence upon the energy resources of any foreign nation.

However, to accomplish this desired goal, the Nation's coal industry must not be allowed to deterioriate through disuse. And an important method of increasing the use of coal, so that the coal industry may remain healthy, is through research.

The anthracite industry is a case in point. Its 1956 production was 7 percent ahead of 1955 and, therefore, to a casual observer, would appear to be regaining strength. Unfortunately, this growth is the result of an increase in foreign business and colder weather, neither of which, while welcome, can be counted upon as perennial plus factors. Actually, the use of anthracite within the confines of the United States continues to decrease, due to competition from oil and gas in the space heating market. Therefore, new uses for anthracite must be developed if the Nation is going to retain this great natural resource as an industry in being.

That is why research to develop anthracite as a synthesis fuel to augment the Nation's comparatively small reserves of oil and natural gas, and as a metallurgical fuel to augment the Nation's fast-dwindling supplies of coking coal, is so important.

Of equal importance is the urgent necessity for research on anthracite mining in order to bring about increased mechanization, and hence increased productivity per man per day. The production per man per day in the anthracite industry approximates 4 tons as compared to 10 tons per day in the bituminous industry. By the development of new mining equipment and procedures, it is well within reason to increase this rate substantially, thereby materially reducing the cost of the coal mined to a level that will permit the producer to sell at a price that will be more attractive to the consumer, while still providing a fair profit.

It is imperative that rapid advances be made in mechanization in anthracite mining, while the industry still has the skilled manpower required to implement the machines. The loss of skilled anthracite miners, largely due to economic conditions, has already seriously impaired the productive capacity of the industry. Many anthracite companies cannot secure, even under today's conditions, the required number of producers, or men who work at the face. It is believed that this situation would be corrected with the advent of increased mechanical mining.

The type of research needed in new anthracite mining techniques were described to you by both Mr. Joseph Corgan, of the United States Bureau of Mines, and myself during your hearings held in June in Washington. For that reason, I will not take your time to repeat this information. However, may I once again stress the fact that this research is vitally needed for the very existence of the anthracite industry. Without it, and with no improvements in mining methods, the industry will surely be a victim of the economic pressures which threaten it.

The Commonwealth of Pennsylvania, during the recently completed session of its legislature, appropriated $500,000 for a coal research program. The coal research board, the implementing agency, has selected several research projects for anthracite, which offer promise of assisting in the aim of creating new uses for anthracite. Anthracite's share of the State research appropriation is $250,000 which, while greatly appreciated, is not sufficient to finance the scope of a research program that the current situation demands. Furthermore, none of the funds is to be used for research on mining or production techniques. This is cited not to depreciate the State research program nor the hopes the industry has for it, but to emphasize the urgent need for additional Federal assistance, so that the many anthracite research projects which are necessary for the survival of the anthracite industry may be undertaken at once. I should like to

repeat the statement I made before this committee in June—that the type of research the industry now requires, along industrial lines and entailing the construction of pilot and demonstration plants, would require a sizable appropriation.

It is our considered opinion that an appropriation of at least $10 million to be used over a 5-year period, would be necessary.

We believe that a program covering a minimum duration of 5 years is absolutely essential to the success of anthracite research. There are many practical considerations which dictate the necessity of a long-term program, and which would surely curtail the value of a shorter term program. In the first place, the type of research contemplated, even under "crash" working conditions, would require several years for successful completion. In the second place, experience has shown that, with the present terriffic competition for the services of trained engineers and scientists, it would be virtually impossible to obtain adequate personnel to implement the research program, unless long-term employment was offered.

The first provision of House Resolution 400 authorizes this committee to explore the possibility of develeping a cooperative research program in which the affected State governments, as well as industry, labor organizations, and private corporations, might participate. As far as anthracite is concerned, in the face of the urgent necessity for the immediate inauguration of expanded research, we trust this committee will recommend an appropriation for a straight Federal research program.

The creation of the Division of Anthracite in the Bureau of Mines in Washington with direct responsibility for all research and mine drainage problems relating to the anthracite industry, has greatly facilitated liaison between the Federal Government, the anthracite industry and the Commonwealth of Pennsylvania in matters of mutual concern.

May we again express the opinion that, in view of the excellent research work on anthracite, which has been and is being conducted by the United States Bureau of Mines Anthracite Experiment Station at Schuylkill Haven, Pa., a sizable amount of any additional Federal funds available for anthracite research should be allocated to the United States Bureau of Mines for expanded anthracite research at its Anthracite Experiment Station.

In closing, I should like you to consider to what lengths a have-not nation, energywise, would go to develop or acquire the energy resources of the magnitude of this Nation's anthracite industry, with its 6¼ billion tons of recoverable reserves, its tens of thousands of highly trained technicians and its great existing production and preparation facilities.

We read that current fuel rationing in Western Europe is caused by a net shortage of approximately 500,000 barrels of oil per day. This is roughly equivalent to 125,000 tons of anthracite daily, which approximates the current daily productive capacity of our industry.

What would England or France now give for a new fuel industry, within its own confines, capable of producing the equivalent of 125,000 tons of coal per day? And how much more would either nation give if, in the past, it had the foresight to develop synthesis plants to convert that energy from its native solid form to liquid and gaseous forms? Estimates might vary as to the amount, but surely it would be infinitely greater than the relatively small amount of Federal funds that would be required to finance an anthracite research program, so that this Nation may retain its great Pennsylvania anthracite industry, as an industry in being, insuring with other domestic energy resource industries, that we will never have to rely upon a narrow strait of water nor the whims of a power-drunk dictator for our energy requirements.

Mr. EDMONDSON. Mr. Aspinall, do you have any questions?

Mr. ASPINALL. I have one question and one request.

Mr. Earnest, in your statement, which is very satisfactory so far as I am concerned, you supplement the statement you made in Washington, you have at the bottom of page 3:

> As far as anthracite is concerned, in the face of the urgent necessity for the immediate inauguration of expanded research, we trust this committee will recommend an appropriation for a straight Federal research program.

Am I to understand that you wish the Federal Government to assume the sole responsibility for whatever program is proposed

wherein Federal funds are used, or do you have in mind cooperative undertaking with industry and the Commonwealth and the community and the Federal Government all involved?

Mr. EARNEST. I have in mind a straight Federal appropriation.

Mr. ASPINALL. A straight Federal appropriation, but not a State-Federal project?

Mr. EARNEST. You say, a State-Federal?

Mr. ASPINALL. A straight Federal appropriation, not a State-Federal project.

Mr. EARNEST. That is right. I mean a Federal appropriation without any strings tied to it as to matching funds.

Mr. ASPINALL. I understand that. But you want a State-Federal project. You want the Federal and the local interests to come into this program?

Mr. EARNEST. In cooperation; yes, sir. Is that what you mean?

Mr. ASPINALL. That is right, as far as they can.

Mr. EARNEST. That is right.

Mr. ASPINALL. In other words, I want it to be clear that you are not after something from the Federal Government by itself to undertake, finding a solution regardless of what the industry or the area is concerned with, but rather you want a cooperative program.

Mr. EARNEST. Not if you are speaking cooperatively so far as money is concerned.

Mr. ASPINALL. What if we are speaking to this extent: Let the industry and the State furnish as much money as they can and not on any given matching basis?

Mr. EARNEST. That is all right, sure, if you put it on that basis. If the overall is substantial enough.

Mr. ASPINALL. Do you think that industry itself, in the anthracite field, is giving all that it can possibly give for such a program at the present time?

Mr. EARNEST. I believe that they are giving just about all that they can give. All you have to do is look at the earnings statements of the coal companies over a period of the last few years, and I do not think you can expect the coal companies to do it.

Mr. ASPINALL. I have one other request. Are you in a position to furnish the committee with a breakdown as to the overall research program you have in mind that would cost $10 million, how $2 million should be spent annually?

Mr. EARNEST. I would be very glad to do that, with the understanding that I would work with your own Federal organization in the preparation of such a program, that is, the United States Bureau at Schuykill Haven.

Mr. ASPINALL. That is all.

Mr. EDMONDSON. Mr. Chenoweth.

Mr. CHENOWETH. Mr. Earnest, I wish you would tell us a little something about the Anthracite Institute, what you are organized to do, and what your present activities are.

Mr. EARNEST. We operate very much like National Coal and American Iron & Steel. We handle what are called general association matters. We have a bulletin; we publish all the statistics of the industry. We try to do analytical work as to where our markets are, where there might be a possibility of expansion.

Mr. CHENOWETH. Could we compare you to the Bituminous Coal Research, Inc.?

Mr. EARNEST. No, sir. The National Coal Association.

Mr. CHENOWETH. You do not do any research work?

Mr. EARNEST. No, sir. We did for a number of years, but, again, because of the economic conditions in the industry and the fact that at about that time at least a larger appropriation was given to the Federal Research Laboratory at Schuykill Haven, our research work was discontinued in about 1953.

Mr. EDMONDSON. Will the gentleman yield for a question?

Mr. CHENOWETH. Yes.

Mr. EDMONDSON. Since the National Coal Association has been mentioned, are you familiar with the recommendations made about a month ago by the National Coal Association for a research program?

Mr. EARNEST. No, sir.

Mr. EDMONDSON. Thank you.

Mr. CHENOWETH. How much did you spend on research?

Mr. EARNEST. Our maximum was—it varied between $250,000 and $300,000 a year. But as I pointed out a minute ago, at the time the only research work we were doing was in domestic markets. We were not attempting to develop anything in the metallurgical field, or in the synthesis field.

Mr. CHENOWETH. You were trying to find new uses for anthracite coal?

Mr. EARNEST. We were primarily working to improve the domestic heating program.

Mr. CHENOWETH. How much is the Bureau of Mines spending a year on anthracite research work?

Mr. EARNEST. They are here and could answer the question, but I understand it is about $400,000 a year.

Mr. CHENOWETH. About $400,000?

Mr. EARNEST. Yes.

Mr. CHENOWETH. And the State of Pennsylvania is spending $250,000?

Mr. EARNEST. That is correct.

Mr. CHENOWETH. And probably some private companies are spending more. Would you say a millino dollars is being spent a year?

Mr. EARNEST. I would imagine at least that much. I am not familiar with what the private companies spend.

Mr. CHENOWETH. So we cannot say no research is being done in anthracite coal?

Mr. EARNEST. Oh, no; there is research work going on.

Mr. CHENOWETH. I believe we heard from one witness in another State something like $17 million was being spent in bituminous research a year, so the field of coal research is not entirely unexplored, is it?

Mr. EARNEST. Oh, no; particularly in the larger bituminous companies. Pittsburgh Consolidation, particularly.

May I add something right there, something I neglected to mention. Just as important, in my opinion, as the matter of metallurgical research and the synthesis is the question of mining research, improved mechanization, and what can be done to reduce the cost of our coal for export; because our picture is about 4 tons per man per day as compared with 10 tons of bituminous, and with bituminous increasing, as

pointed out in Washington. That is no reflection on the engineers and heads of the anthracite companies. It is a question of the difference of the formation of the coal. But there are indications today that considerable progress could be made in mining research if the money were available.

Mr. CHENOWETH. I am interested in your recommendation that you think the Federal Government should put up all of this money for the research program in anthracite coal when all of the deposits of anthracite coal are in the Commonwealth of Pennsylvania.

Mr. EARNEST. Congressman, that is my feling, and I will try to explain a little more why it is.

The anthracite industry is so different from the bituminous. In the first place, bituminous is mined, I believe, in 22 States. We are here in one State. Yet the deposits in this one State contain almost 100 percent of all the anthracite reserves in the United States. Because of its superior eventual, I hope, potential use, this is really a national problem to find uses for anthracite which can be of great value to this Nation in times of emergency, particularly.

Mr. CHENOWETH. The economic impact of this recession is felt right here in Pennsylvania, is it not?

Mr. EARNEST. Yes.

Mr. CHENOWETH. And not in these other 21 States, or 22 States of bituminous or any other State at all; is that correct?

Mr. EARNEST. I will agree on that statement.

Mr. CHENOWETH. Do you not think there is a heavy responsibility that rests on the Commonwealth of Pennsylvania, then, to get into this research program perhaps a little more actively?

Mr. EARNEST. I will put it this way: I think there is a responsibility in the State, but I take the overall position that the whole question of research on natural resources is a Federal matter, not a State. I think the States should do what they can do; yes, sir.

Mr. CHENOWETH. Are you critical then of the half million dollar appropriation of the State of Pennsylvania?

Mr. EARNEST. No; we are very appreciative of it.

Mr. CHENOWETH. You think it should be a Federal appropriation?

Mr. EARNEST. I certainly do. We do not have the figures, but it is my impression that the Federal Government has spent over a period of years millions, if not billions, on agricultural research, on oil, and on any number of other items having to do with——

Mr. UDALL. Will the gentleman yield?

Mr. CHENOWETH. Yes.

Mr. UDALL. I think the witness is giving the wrong impression. It is not your idea that the Federal Government move in and the State of Pennsylvania shut down its program?

Mr. EARNEST. No.

Mr. UDALL. You think they should go ahead and appropriate as much as they are appropriating or more; is that correct?

Mr. EARNEST. That is exactly correct.

Mr. UDALL. I am afraid you were giving the wrong impression. Thank you.

Mr. CHENOWETH. I get the impression he feels it is primarily the responsibility of the Federal Government to carry on this research program in anthracite coal.

Mr. EARNEST. I did not go so far as to say primarily. I do not believe I did. What I mean is, I think the large amount of money to solve this problem in the anthracite industry properly should come from the Federal Government.

Mr. CHENOWETH. What is the financial condition of the Commonwealth of Pennsylvania at this time?

Mr. EARNEST. I am not in a position to say.

Mr. CHENOWETH. Is it operating in the black or the red?

Mr. EARNEST. I cannot be a witness on that subject.

Mr. CHENOWETH. I just wondered. You see we are getting pretty short down in Washington.

Mr. EARNEST. We never had such a friendly committee to talk to before either, or as interested a committee.

Mr. CHENOWETH. In other words, we are trying to help the anthracite industry.

Mr. EARNEST. I know you are.

Mr. CHENOWETH. I know it is my personal attitude this is not entirely a Federal responsibility by any means.

Mr. EARNEST. I do not think so entirely.

Mr. ASPINALL. Will the gentleman yield?

Mr. CHENOWETH. I will be glad to yield.

Mr. ASPINALL. What is the price of anthracite coal at the loading dock, at the mine?

Mr. EARNEST. We have a number of different sizes.

Mr. ASPINALL. I mean the average price.

Mr. EARNEST. The domestic size coal is $15.75. It varies from that. That is your large size. It goes down to $9.75, $8.75, $7.75, all the way down to about $6. From $6 to $15.75.

Mr. ASPINALL. Just figuring the production for 1956, the figures given, the economy of the State or the Commonwealth of Pennsylvania takes about $280 million from the anthacite coal industry annually. I realize that it is depressed, and I realize that you have difficult social and economic conditions in the area. I would go further and would suggest that it does have an impact on the economy of the rest of the United States, especially the eastern seaboard area. But, on the other hand, it seems to me, Mr. Earnest, that if you have an industry which even in these depressed times is worth to you over a quarter of a billion dollars, then perhaps the industry as well as the Commonwealth has just a little bit more responsibility in this matter than you seemingly wish to accept.

I would suggest to you that in 1944, when you were in the heyday, it perhaps was worth three-quarters to a billion dollars to your economy and at that time the industry did not assume too much responsibility toward looking to the future. What we folks, representing the different areas of the Nation, must do is to see to it that any program such as this not only has Federal attention but also that the area where it is of prime importance is doing everything it can in order to help itself.

I think that is what is bothering my colleague from Colorado and myself in the questions that we have put to you.

Mr. EARNEST. You are not of the impression that all of that money is staying in Pennsylvania.

Mr. ASPINALL. Oh, no. I admitted that in my statement to you. On the other hand, I think it is of primary importance to the area where the resource means so much to the local economy.

Thank you very much.

Mr. EARNEST. I would like to comment on that once more. I may be repeating myself. But I look at it something like Mr. Larsen said this morning and Mr. Sword used the same expression. We are on that escalator trying to move up a little. I think that the industry should do all it possibly can. I think the State should do all it possibly can, but I am not of the opinion that the industry of the State can do it fast enough. I think what the State has done is wonderful.

Mr. ASPINALL. I agree with you on that, and that is the reason we are here.

Mr. EARNEST. But we have to move fast to save this industry which is of utmost importance to this Nation, in my opinion, and that is the reason I think it has to come from the Federal Government.

Mr. EDMONDSON. Judge Chenoweth has one more question.

Mr. CHENOWETH. I have one more question or observation. Last week in Johnstown I believe Dr. Rose, who is director of bituminous coal research——

Mr. EARNEST. I know him very well.

Mr. CHENOWETH. Advised the committee his budget, I believe, was about a million dollars a year contributed by the industry and everyone interested in bituminous coal.

Mr. EARNEST. Yes.

Mr. CHENOWETH. Could you not set up something like that in the anthracite industry? Those who are selfishly interested, whose bread and butter and livelihood is involved, surely have some desire to set up a similar program.

Mr. EARNEST. I would say that proportionately we are spending much more than the bituminous industry. If we had a production of 525 million tons in the anthracite industry, I think we would have a very substantial program.

You asked a question a little while ago about why we did not share in some of the increases that are going on. The sharing in the bituminous industry of a lot of increases is automatic. As your energy load goes up, bituminous gets the business. We have a very limited market there where we can hope to cash in on the general improvement and conditions. But for a number of years—Dr. Rose would be the first one to confirm this statement—the anthracite industry spent more in total for research as an industry than the bituminous industry.

Dr. Rose was the head of our laboratory at that time, and they took him from our organization. So a million dollars is not a very large program for an industry the size of bituminous.

Mr. CHENOWETH. Is there some direct competition between bituminous and anthracite for certain markets?

Mr. EARNEST. Generally speaking, only in the power field.

Mr. CHENOWETH. Power field?

Mr. EARNEST. Yes. We sell in our steam sizes a little over 3 million tons to the utility companies. Someone asked that question. But that is in this immediate area where we do not have the freight-rate burden.

Mr. CHENOWETH. It that not increasing?

Mr. EARNEST. It is just about holding its own.

Mr. CHENOWETH. Bituminous is increasing?

Mr. EARNEST. Bituminous is increasing. You see we cannot compete with bituminous on a B. t. u. basis. They produce more tons per man per day, they have higher B. t. u., less ash. We have to find uses to take advantage of the inherent advantages.

Mr. CHENOWETH. I think that is all. Thank you very much, Mr. Earnest.

Mr. EDMONDSON. Mr. Metcalf.

Mr. METCALF. I have no questions.

Mr. EDMONDSON. Mr. Udall.

Mr. UDALL. I think again you made a very effective presentation. I do join with my two colleagues from Colorado in expressing the opinion that the best way to get the maximum Federal program is that we are able to present a picture to the Congress not only of the State of Pennsylvania doing what it is doing, but perhaps even increasing its efforts, and of the industry itself doing as much as it is reasonable to expect it to do under the circumstances. If that is the picture that we can present, we are able to do a better job.

With regard to the point that Congressman Chenoweth made, although I am again stating the classic argument of Dan Flood which he effectively uses from time to time with us—in one sense, certainly as far as you people here are concerned, the farming problem is a problem that exists in various States and various areas, and I dare say that none of the $5 billion we are pouring into the farm economy because we feel to keep a healthy farming economy is in the national interest—that very little of that will get into Luzerne County, the soil bank and corn price supports. Yet, if a healthy farm economy is in the national interest, under the proper circumstances that we describe a healthy anthracite coal industry is in the national interest. So I think we can try to take that balanced viewpoint of it if you people are doing all that you can.

That is all I have to say.

Mr. EDMONDSON. Are there any further questions?

Mr. FLOOD. I would just like to observe that mention was made of the development of the resources by the oil industry. I think that is in direct ratio to the depletion allowance permitted to the anthracite people; that if and when the anthracite people are permitted 27½ percent depletion allowance, their contribution to research in direct ratio would be increased, I expect. I think that is most unlikely, so we have little to look forward to.

My only other comment was with relation to the population and Federal responsibility. A million and a half people live in the coalfields. There are several entire sovereign States in the 48 who have only a percentage of that population who are the recipients of several billions of dollars of direct Federal aid, to which we have no objection.

Mr. EDMONDSON. Mr. Earnest, you made a splendid witness as always, and we appreciate your appearance before the committee and also appreciate the materials you have supplied.

We will take a 5-minute recess.

(A short recess was taken.)

Mr. EDMONDSON. The subcommittee will be in session.

Mr. Aspinall has a request to address to Mr. Earnest before we proceed with our next witness.

Mr. ASPINALL. Mr. Earnest, will you furnish the committee with a statement showing the contributions made by each operating anthra-

cite coal company in the anthracite area for research purposes for the years 1955 and 1956?

Mr. EDMONDSON. Will the gentleman yield?

Mr. ASPINALL. Yes.

Mr. EDMONDSON. I wonder if we could not have that cover a little longer period of time, if he has the information. I think there would be a rather impressive figure shown for years prior to 1955—56 that would be helpful to us.

Mr. ASPINALL. I would like to make it in the last 10 years or as much thereof as possible.

Mr. EARNEST. All right.

Mr. ASPINALL. I ask unanimous consent that such material be placed in the record of these hearings at this point.

Mr. EDMONDSON. Without objection, it is so ordered.

(The information follows:)

ANTHRACITE INSTITUTE,
Wilkes-Barre, Pa., April 24, 1957.

Hon. ED EDMONDSON,
Chairman, Subcommittee on Coal Research, Committee on Interior and Insular Affairs, House of Representatives, Washington, D. C.

DEAR MR. EDMONDSON: When your committee was in Wilkes-Barre on February 22 you requested the attached information as to the amount of money spent for research by the anthracite industry, for the past 10 years.

We regret the delay in forwarding this material to you but it was necessary for some of the producing companies to check back into their detailed records over a period of years.

Sincerely yours,

F. W. ERNEST, JR., *President.*

Total amount of money spent by member companies of Anthracite Institute and Anthracite Institute for Research for the past 10 years

1947	$335,445	1952	$746,788
1948	429,638	1953	806,172
1949	402,147	1954	988,463
1950	341,391	1955	412,478
1951	351,224	1956	226,290

ANTHRACITE INSTITUTE,
Wilkes-Barre, Pa., March 27, 1957.

Hon. ED EDMONDSON,
Chairman, Subcommittee on Coal Research, Committee on Interior and Insular Affairs, House of Representatives, Washington, D. C.

DEAR MR. EDMONDSON: Part of my testimony submitted to your committee at its hearing held in Wilkes-Barre, Pa., on February 22, 1957, had to do with reasons why, in my opinion, the conducting of anthracite research is a proper function of the Federal Government.

I should appreciate it if your committee would consider this letter as a further amplification of my remarks.

During my testimony I based my premise that anthracite research is a proper function of the Federal Government on the point that anthracite is a natural resource, not just of the Commonwealth of Pennsylvania, but of the entire Nation. Its present uses are not confined to the people of Pennsylvania but, rather, are extended to millions of people all through the New England and Middle Atlantic States. Its potential uses, considering its possible metallurgical and synthesis fuel applications, would cover a much greater area.

We, as a Nation, must recognize that an energy natural resource is of tremendous importance. Projections of national energy requirements show that all of our energy resources will be pushed to the utmost to keep pace with demand. It follows that energy resources, whether located in one or several

States, should be of supreme concern to this country, and that the Nation cannot afford to risk the loss of even one natural resource due to any defection upon its part.

In addition to anthracite's importance to the future of this Nation in playing its part in meeting stepped-up demands for energy, is its unique position of being the only fuel, in addition to metallurgical coke which can operate successfully in a steel-blast furnace. If anthracite held no other promise as a fuel vital to the Nation's security and economy, this potential use alone would, in our opinion, justify the Federal Government underwriting a research program as insurance that the steel industry will not run short of metallurgical fuel.

While, for the reasons stated above, we believe a sizable program of Federal research on anthracite is important to the whole Nation's future and therefore completely justifiable, we do not imply, by any means, that anthracite research should be the sole responsibility of the Federal Government. The industry and the Commonwealth of Pennsylvania also should participate in research on anthracite up to the extent of their respective abilities to do so.

We will supply additional data to your committee showing the annual expenditures of the industry for research over the past 10 years. In addition, as per testimony given by the Honorable Joseph T. Kennedy, secretary of mines and mineral industries, Commonwealth of Pennsylvania, the State program for anthracite research is currently running at an annual rate of $250,000.

However, private and State anthracite research programs should be supplemented by a large Federal program to insure that this vital natural resource remains as a liquid asset, ready to respond immediately to the Nation's energy requirements.

It is our recommendation that a Federal anthracite research program should not be dependent upon a matching program on the part of either the anthracite industry or the Commonwealth of Pennsylvania.

Sincerely yours,

F. W. EARNEST, Jr., *President.*

ANTHRACITE INSTITUTE,
Wilkes-Barre, Pa., March 27, 1957.

Hon. ED EDMONDSON,
Chairman, Subcommittee on Coal Research, Committee on Interior and Insular Affairs, House of Representatives, Washington, D. C.

DEAR MR. EDMONDSON: Referring to our conversation Friday night, February 22, in Wilkes-Barre, I have received a copy of the statement made to your committee by Mr. Hary La Viers, representing the National Coal Association, on February 11, 1957.

In my two appearances before your committee I have indicated that the anthracite industry is satisfied with the progress that is being made on anthracite research by the United States Bureau of Mines, but we feel the Bureau is badly handicapped because of insufficient appropriations. Our industry has no objection to the recommendation made on page 5 of the National Coal Association report "that the Congress provide an independent agency of the Federal Government, with adequate industry representation, to supervise and administer a coal research program."

However, we would want to be satisfied that the language of any enacted legislation would clearly provide the authority for the "Commission" to give a "grant in aid" to the United States Bureau of Mines to supplement its current appropriation. Also, it would be our recommendation that in any bill proposed a specific sum of money be named for anthracite research, rather than all funds being allotted to an overall coal research program. Our industry recommended in accordance with my testimony an appropriation of $2 million a year for a 5-year period for such a Federal anthracite research program.

Sincerely yours,

F. W. EARNEST, Jr., *President.*

Mr. EDMONDSON. Mr. Saylor, you had stepped out for a moment when Mr. Earnest finished his statement. Do you have any questions?

Mr. SAYLOR. I have no questions of Mr. Earnest.

Mr. EDMONDSON. We will take the next witness.

Mr. FLOOD. The next witness is Mr. F. O. Case, president of the Glen Alden Corp. He appears in rather an anomalous position. For some 40 or 45 years—Mr. Metcalf and Mr. Udall will be glad to know—he was identified with the Anaconda Copper Co. So they should feel at home with him.

Frequently in all situations we are so close to the forest sometimes we cannot see the trees, and we are happy to have Mr. Case as president of the great Glen Alden Co. because he has brought a fresh point of view, a great administrative talent, and has given the industry from his chair a great shot in the arm in the very few years he has been with them.

Mr. EDMONDSON. We are pleased to have you with us, Mr. Case.

STATEMENT OF F. O. CASE, PRESIDENT, GLEN ALDEN CORP., WILKES-BARRE, PA.

Mr. CASE. Mr. Chairman, Mr. Flood, and members of the committee, first, may I correct that 40 years? I am not quite that old, Dan. It is 32 years.

I would like to make a statement and back up everything that Secretary Kennedy has said and Mr. Earnest, and also to thank the Bureau of Mines for their work, because it has been outstanding in connection with blast furnaces and metallurgical work. I think they will do much more even with the limited funds, but I would like to see them do a great deal more, as Mr. Earnest has pointed out.

I would also like to pinpoint this research in this way: that I do not believe that the industry will survive too long unless we can find markets through research or other means to hold us together in the next 5 or more years. I have great optimism for the industry over the future. What that future is, whether it is 5 years or 10 years is difficult to say. But certainly, when you come to gasification and chemicals and metallurgical use of anthracite, we are, I believe, going to see the day when it will come back.

But coming in from the outside, I can speak very forcibly about the difficulties that our company has had in the past 4 years. I know that it would be impossible for us to spend more money than we have spent on research or development.

Really those two go together with our company. Our laboratory and research work is partly sales development, partly development work in connection with the collieries, and some research work.

Beyond that, I think I would be glad to submit to questioning, if there are questions, because on the subject of research I think it has been covered very well here today and I do not want to take the time unnecessarily.

Mr. FLOOD. I might add, for the benefit of the committee, the Glen Alden Corp. is the largest single producer in the anthracite field, and its headquarters are now in the city of Wilkes-Barre.

Mr. EDMONDSON. Thank you very much, Mr. Case.

Are there any questions?

Mr. ASPINALL. No questions.

Mr. EDMONDSON. Mr. Saylor.

Mr. SAYLOR. Mr. Case, has your company devoted most of its research toward a progressive sales program for the use of anthracite coal?

Mr. CASE. That is correct, sir. Also we have promoted its production and use and installation of automatic burning equipment to keep anthracite in the home.

The other large item, which has nothing to do with that, which we did earlier, the first year or year and a half I was in the region, had to do with the production of chemicals from anthracite. We shipped a large tonnage of coal to British Columbia, using equipment owned by the Consolidated Mining & Smelting Co., and produced chemicals for several weeks with anthracite. It worked very well. We have the cost figures where we can equal the cost of gas laid down here, but we cannot make the cost necessary to pay the cost of installation, the capital charges. In other words, it would be a few years before it is economic from our standpoint, from the standpoint of our company, to gasify coal and either use it for gas to supplement natural gas or to use it for the production of chemicals. That is why I say the future, I believe, looks very good, but is that future 5 or 10 years or longer?

Mr. SAYLOR. In other words, one of the basic problems you have is to survive until that market opens up?

Mr. CASE. That is absolutely correct, sir.

Mr. SAYLOR. And the picture, as shown by Mr. Kennedy, of the dropoff from 180,000 miners down to 38,000, as well as the dropoff of tonnage, especially within the past few years, indicates it is a serious problem that not only your company has but all the other companies in the area at this time?

Mr. CASE. That is right, sir.

I might add, to do away with any thought that the industry is not trying, I do not think we are any different than the others, but I can speak for our company that the coal we produced last year cost us about $15½ million less than it would have cost in 1951 had it been produced at that time. That is including at least one wage grant in 1952. There might have been another one in 1952 or 1951. I do not remember that. I was not here.

Mr. SAYLOR. I have one other question. The reason I am going to ask this next question is I noticed we have had no representative of the machine industry here or that outfit which is devoted to developing machinery for the mining of anthracite coal.

Has there been any research that you know of by the machine companies toward the production of better machines for producing or increasing the tonnage of the man in the mines?

Mr. CASE. I do not believe they have carried on such work for anthracite alone. At least I am not familiar with any of it. But we have used a lot of mechanical equipment, and do use it, and are equipping ourselves wherever that is economical. I refer to loading equipment, shuttle cars, belt conveyors, or any such equipment that will help us. The mechanical or continuous miner, so-called, is not as economical so far as the universal cutters and loaders, that combination and shuttle cars. The trouble with the continuous miner is that it is not continuous for any great length of time.

Mr. SAYLOR. In other words, the pitches that you find in the anthracite field do not lend themselves to the same type of operations as they do in the bituminous fields?

Mr. CASE. That is right, and the difficulty with keeping the cutting tools in form and shape.

Mr. SAYLOR. That is all, Mr. Chairman.

Mr. EDMONDSON. Mr. Metcalf.

Mr. METCALF. Mr. Chairman. Mr. Case, I gather that most of the research that your company has participated in has been to find improved mining methods.

Mr. CASE. Not entirely, no, sir. In briquetting, in grinding, in gasification and flotation, we have done quite a lot of work in the laboratory, and we also have done a good deal of metallurgical work to find out which coal is best suited to which metallurgical process or chemical process. It has been more or less a sales development program.

Mr. METCALF. Do you intend to continue that research?

Mr. CASE. By all means, yes, sir, to the extent of our ability.

Mr. METCALF. And to expand it?

Mr. CASE. I do not know whether we will expand it or not. We have yet to make any money on coal. I think this year we will. If we do, we certainly will expand research work.

Mr. METCALF. If Congress appropriated $2 million a year for 5 years for anthracite research, would that cause you to let down on your own company's resarch program?

Mr. CASE. No, sir; it would not, because I vision such an appropriation would enable th Bureau of Mines to carry on mining research in a way we cannot afford under present conditions.

Mr. METCALF. But you would continue to do everything possible as far as your corporation was concerned?

Mr. CASE. Yes, sir; I might also add that we have diversified. I believe we were probably one of the first to do that in a large way. We have diversified into air conditioning equipment and mobile equipment production, and it is that diversification that has enabled us to keep the coal business going. We made enough money otherwise to do so. But I hope this year, with all the things we have done in the last 4 years, to be able to produce coal with at least some profit.

Mr. METCALF. With your experience in the copper mines, you know how badly we need some air purifying equipment down in those mines.

Mr. CASE. I am familiar with your Butte situation; yes, sir.

Mr. METCALF. That is all.

Mr. EDMONDSON. Mr. Chenoweth.

Mr. CHENOWETH. Mr. Case, my colleague, Mr. Flood, was kind enough to volunteer the information you were the largest single producer in the anthracite field. We were glad to get that because you would be too modest to tell us yourself. So I am interested, and I am sure other members of the committee, in your operation, how much you produce a year, and how many men you employ.

Mr. CASE. I believe last year we were not the largest in tonnage. I think the Philadelphia & Reading was in entire tonnage. But in allocated tonnage our allocation is the largest production.

Mr. CHENOWETH. How much was that?

Mr. CASE. We produced about 4,100,000 tons.

Mr. CHENOWETH. That is out of about 28 million altogether?

Mr. CASE. Twenty-six, I believe or twenty-nine. It depends on which figure we take. There seems to be some difference.

Mr. CHENOWETH. You are producing a pretty substantial amount then of the total?

Mr. CASE. Yes, sir.

Mr. CHENOWETH. I did not get your statement on your own research program. What did you say you are spending on research?

Mr. CASE. I did not say, sir, but it is in the neighborhood, exclusive of automatic burning equipment, of about a hundred thousand dollars a year.

Mr. CHENOWETH. What would you think about a proposal to take a cent a ton, say, on each ton produced for research work? Would that be feasible or practicable in the anthracite industry?

Mr. CASE. We certainly would be willing to do that.

Mr. CHENOWETH. Has that ever been proposed or suggested?

Mr. CASE. I believe you would find the same thing with that you find with many things in anthracite, that the unionized mines and the really organized operations would join, and many others of the smaller ones would not. I certainly would be happy to go along.

Mr. EDMONDSON. Will the gentleman yield at that point?

Mr. CHENOWETH. I will be glad to.

Mr. EDMONDSON. If I understood the gentleman's figures on production, you are spending about 2½ cents per ton on research now. Is that right?

Mr. CASE. Yes, sir. Then we have spent an average of $400,000 a year on mechanical equipment for burning coal in the homes and small industries and stores and so on.

Mr. CHENOWETH. What would your figures be, Mr. Case, that you say you have spent?

Mr. CASE. If you consider the automatic burning equipment, which is not research but is really an attempt to reduce the cost of such equipment so we can compete with oil-burning equipment and gas-burning equipment, and I would not call that research——

Mr. CHENOWETH. In a broad sense it might be called research.

Mr. CASE. Promotional, yes, sir. I would say a half a million dollars.

Mr. CHENOWETH. A half a million?

Mr. CASE. Yes, sir.

Mr. CHENOWETH. Are other companies engaged in similar programs?

Mr. CASE. I am sure they spend considerable amounts of money, but I would not undertake to say how much.

Mr. CHENOWETH. Are all of the large anthracite operators carrying on some research program similar to yours? Maybe not as extensive, but to a certain degree.

Mr. CASE. I believe they are. I have been so busy with Glen Alden I have really not had too much time to get into their business.

Mr. CHENOWETH. I understand, but you have a general knowledge of the anthracite field.

Mr. CASE. I feel they are.

Mr. CHENOWETH. Then we would be safe to assume that several million dollars is being spent every year right now by the anthracite operators for research purposes, would we not?

Mr. CASE. I doubt if they are spending anything like what we are.

Mr. CHENOWETH. You are spending $500,000, the State of Pennsylvania is putting up $250,000, the Bureau of Mines is putting up $400,000, I believe. It would not take much to run that up to a couple of million right there.

Mr. CASE. But we are not doing the job, sir.

Mr. CHENOWETH. How much do you think should be spent?

Mr. CASE. I believe Mr. Earnest's figure is quite modest.

Mr. CHENOWETH. He said $2 million. Two million is being spent right now. You think it should be more?

Mr. CASE. Two million additional. I would not want to stop anything being done now. We are having a tough time now as it is to survive, and I do not think we could survive if it were not for diversification.

Mr. CHENOWETH. What has your diversification program accomplished for your program?

Mr. CASE. We have invested $6 million in it so far in the past 2 years, and we made several million dollars on the investment. I think that is a bit unusual, and we probably will not duplicate it.

Mr. CHENOWETH. What is this 6 million spent for?

Mr. CASE. In air conditioning equipment and mobile equipment, defense items, trash trucks, special fire engines and special trucks for Consolidation Edison, for example, or the A. T. & T., the subsidiary Western Electric, and things of that kind.

Mr. SAYLOR. Will the gentleman yield?

Mr. CHENOWETH. Yes.

Mr. SAYLOR. By that you mean the company has diversified in manufacturing, gone into other lines rather than production of coal?

Mr. CASE. That is right. Originally, we hoped to diversify based on coal into gassification and chemicals, but it does not seem to be economically feasible. Hence that has been put on the shelf until it is.

Mr. CHENOWETH. I am glad my colleague brought that out. I thought you were talking about coal uses.

Mr. CASE. No, sir; I am sorry.

Mr. CHENOWETH. Are other companies going into outside activities in addition to your company?

Mr. CASE. I do not like to speak for anybody else, but it is well known that Philadelphia & Reading is.

Mr. CHENOWETH. We are safe to presume that other companies generally are, that they have to to survive. Is that it?

Mr. CASE. I believe some are in bituminous coal.

Mr. CHENOWETH. I mean in the anthracite field right here.

Mr. CASE. I do not believe there is too much other than that.

Mr. FLOOD. May I point out that the Philadelphia & Reading Co. to which the witness referred is one of the old-line anthracite producing companies.

Mr. CHENOWETH. One other question. How many men do you employ?

Mr. CASE. Actively, 4,500.

Mr. CHENOWETH. How does that compare with 5 years ago, say?

Mr. CASE. It was about 11,000.

Mr. CHENOWETH. Less than half of what you had 5 years ago. That is all.

Mr. FLOOD. I might point out further, as I understand Mr. Earnest's statement in Washington and here, the total sum of money now being engaged in research and development by the industry itself is about a million and a half dollars, and he was arguing in behalf of a Federal appropriation which would amount to a matching basis in round num-

bers with what the industry and both governments are already doing. That is the impression I had in Washington and here—that nothing should be discontinued now being done up to this moment.

Mr. EDMONDSON. Mr. Case, I have a question or two.

Does the figure given by Mr. Earnest of about 4 tons per man per day on production represent a fully mechanized operation?

Mr. CASE. I would say that is a very good figure. We vary from maybe one-third of that to that figure, and even higher on stripping.

Mr. EDMONDSON. Do you use substantially the same type of machinery at the face that is used in the bituminius coal mines?

Mr. CASE. I do not think we do in most cases. They are going more and more to automatic equipment, continuous mining equipment of various kinds.

Mr. EDMONDSON. About how many men would you have working at a face in your operation?

Mr. CASE. Usually 2 or 3, at the most, at one place.

Mr. EDMONDSON. Are there any further questions?

If not, thank you very much.

Mr. CASE. Thank you.

Mr. EDMONDSON. We will have the next witness.

Mr. FLOOD. The next witness, Mr. Chairman, is Mr. M. F. Brennan, president of District No. 7 of the United Mine Workers of America.

As you know, the United Mine Workers of America cover the various coal producing areas and are divided into districts. There are three districts—Nos. 1, 7, and 9—covering the hard-coal fields and their representatives are all here.

Mr. Brennan has been designated by Mr. Kennedy, vice president of the United Mine Workers and resident of Hazelton in this congressional district, a hard-coal man, to speak for the United Mine Workers of America.

It is unnecessary for me to develop the importance of labor to the production of coal. You have heard Mr. Kennedy and Mr. Earnest agree on the importance basically of the man at the face of the chamber cutting the coal. And Mr. Brennan speaks for those men and their allies in labor and industry.

Mr. EDMONDSON. Mr. Brennan, we are very happy to have you before the committee.

Mr. SAYLOR. Just before you start, Mr. Brennan.

Mr. Flood, I think for the purpose of the record, unless I am mistaken, you should correct the impression that the Mr. Kennedy you referred to was the Mr. Kennedy who appeared before us.

Mr. FLOOD. I think that is well said. The Mr. Kennedy to whom I referred is also Thomas Kennedy, a very close friend of the other Thomas Kennedy, the two "Toms" we mentioned here. The Thomas Kennedy to whom I refer is the vice president of the United Mine Workers of America and a resident of the city of Hazelton. Your witness today is also Mr. Kennedy, but Joseph T. Kennedy who lives in Wilkes-Barre and is secretary of mines of the Commonwealth of Pennsylvania.

Mr. EDMONDSON. Mr. Brennan, now we have our Kennedys straight; will you proceed.

STATEMENT OF MART F. BRENNAN, INTERNATIONAL REPRESENTATIVE, DISTRICTS 1, 7, AND 9, UNITED MINE WORKERS OF AMERICA

Mr. BRENNAN. Mr. Chairman and members of the committee:

At the outset, I want to say I agree entirely with the statements made by Secretary of Mines Kennedy and Mr. Earnest and Mr. Case in a general way.

I represent, of course, the United Mine Workers of America in districts 1, 7, and 9. In addition to being the international representative of 1, 7, and 9, I have been president of district 7, located in the central field at Hazelton for the past 15 years, a little more than that. Prior to that time I was president of district 9 with offices at Shamokin for a period of 11 years.

So that I represent all the miners in all the anthracite coal producing counties of Pennsylvania; 25,000, 2,000 more now, are presently employed in these counties. Twenty years ago there were nearly 100,000 miners employed in this same area, and 5 years ago there were in excess of 70,000 men employed here. I mention these figures to show what has been happening to this region because of the shrinkage in the number of mines and the consequent increase in the number of unemployed miners.

The picture in the anthracite region is something like this: 25,000 employed in the production of coal and 30,000 or more who are idle or employed away from the region only waiting for the chance to work at the only trade they know—mining coal. The men who are working earned about $100 million in wages in 1956. For each ton of coal mined and sold 50 cents is paid into the anthracite health and welfare fund. This fund pays $800,000 a month to 16,000 retired miners who are no longer able to work in the mines because of age or infirmity, or both.

This fund also pays many thousands of dollars each year to the dependents of the deceased members of our organization. Large sums of money have been given to the Barton Memorial section of Jefferson Hospital, Philadelphia, Pa., for research for a cure or at least a method of giving relief to those who are afflicted with the disease known as anthrascosilicosis, which is caused by the inhalation of silica dust while working in the mines. In addition to this, 75 to 80 million dollars is paid in freight rates to the railroads. This gives you some idea, I am sure, of the coal industry's value to this part of the country.

Those who know the miners realize that if given an opportunity to work reasonable steady time they would rather be mining coal than performing other work. This is borne out by history. In World War I when there was plenty of work in all parts of the country, the older men who did not go into the Armed Forces stayed on the job of mining coal and produced a record of 100 million tons of coal in the peak year. In World War II they produced all the coal that was needed for use in our own country and a large tonnage for our allies.

Today our men are producing more coal per man than ever before, but because of unfair competition from natural gas and cheap residual foreign oil being dumped on our shores fewer men are employed in the anthracite mines and less coal produced than at any time in nearly

80 years. Last year we did produce about 7 percent more than in 1955, but that was because of exporting to Europe, and our domestic sales declined about 5 percent.

Apparently up to this time our Government was not too interested in trying to help an industry that has contributed so much to the well-being and comfort of our people and the defense of our Nation; an industry that has always produced and is still producing a safe, clean, smokeless, economical fuel, and a fuel that can be depended upon in the future.

There is more than 150 years' supply of hard coal still available. However, there is grave danger that if something is not done by our Representatives in Congress there will not be enough miners left in the region to produce this premium fuel in the event that there is a shortage of other fuels caused by a situation such as the Suez crisis or something more serious.

It may be said that we cannot force people to use coal if they prefer other fuels. This we admit. However, on this score we would like to point out that if anthracite coal is given a fair chance to compete with other American fuels it can hold its own. Therefore, if some people prefer other fuels for space heating, that is their privilege, but I maintain that Congress should not allow a great natural resource like anthracite to stay in the ground unused, while cheap foreign residual oil replaces it and keeps thousands of our miners idle or forces them to seek work in other industries.

The mine workers have a keen interest in anthracite's future, and we have always felt that higher Federal appropriations for research was vitally necessary. I am familiar with the work at the Government laboratory at Schuylkill Haven, Pa., but in our opinion they do not have sufficient funds to do the vital research needed in both utilization and mining.

It is my opinion that a broad program of research should be initiated by the Congress with ample funds to consider uses for anthracite other than for space heating. A few of the other uses that could be mentioned are the use of anthracite with coke in blast furnaces, the possibility of developing a metallurgical fuel superior to coke, thus improving the productive capacity of the steel industry, and investigation of a program for the production of synthesis gas in order to obtain gasoline, alcohol, and so forth, and also the development of modern mining equipment, in order to increase production and at the same time make mining more attractive to our young men who are becoming discouraged and are inclined to leave this industry.

I say this because the trend of the younger people of this region is to leave this territory and seek employment in other fields of endeavor, where there appears to be a reasonable chance of earning a livelihood. If this is not done, we will then be faced with the dilemma of having plenty of coal in the ground but not having the necessary skilled miners to produce it. In my opinion the centering of all research and mine drainage matters in a separate division in the United States Bureau of Mines in Washington is proving of great benefit to the mine workers and the anthracite industry.

We admit that there is no magic formula to find a solution to the conditions which exist in this region, but a solution there is, and the United Mine Workers of America pledges its support to the industry

and to the Congress to help find it. Finding this solution, in our opinion, will go a long way in reducing unemployment in our region and prove to be a boon to our country's economy.

Therefore, I say let Congress supply the research to bring out all the advantages that anthracite coal can supply. The operators have the resources of more than 150 to 175 years' supply of clean, smokeless hard coal. The United Mine Workers of America can supply the skill and experience to bring this safe, clean, smokeless fuel from the recesses of the earth for the betterment of America.

That, Mr. Chairman, is the statement for all of the anthracite region representatives, districts 1, 7, and 9.

Mr. FLOOD. I might add for the information of the committee, Mr. Chairman, Mr. Brennan is also the executive secretary of what we call the Miners Pension Fund, in addition to being president of the district.

Mr. EDMONDSON. A very fine statement, Mr. Brennan.

By unanimous consent of the committee, including the senior members, I will recognize the gentleman from Arizona for the first questions.

(Discussion off the record.)

Mr. UDALL. To what extent are the younger men, as was pictured here this morning in the presentation, leaving the local area and moving permanently elsewhere, leaving only the older miners available? Is that a definite trend or is it something that is just beginning?

Mr. BRENNAN. I think it has been a definite trend for some years because of lack of work opportunity in the region.

Mr. UDALL. At this stage of the thing, if, due to research or other technological changes, or other factors, the situation can be produced where anthracite production would be increased, is there a work force among the miners ready today to get the coal out and see that it is marketed?

Mr. BRENNAN. I will answer that in this way: A large number of our people have moved away; but, in my opinion, if the people had a definite understanding that there was a reasonably bright future in the anthracite industry, many of them would return to work in the mines; yes, sir.

Mr. UDALL. Assuming that what all of us would like to see happen does happen, namely, a different picture for the anthracite industry, you do not anticipate a shortage of the work force that would be necessary to do the job—ready to do the job?

Mr. BRENNAN. I think there is at the moment a reasonably good chance of getting a large part of the work force back if there was work opportunity here. Yes, I do.

Mr. UDALL. That is all I have.

Mr. EDMONDSON. Mr. Chenoweth.

Mr. CHENOWETH. You mention 30,000 idle miners in this area now. Was that the correct number?

Mr. BRENNAN. I said 30,000 miners or more were idle now, or had left the region to seek employment in other industries.

Mr. CHENOWETH. They are no longer connected with the coal-mining industry?

Mr. BRENNAN. A large part of them are not; no. Primarily they are miners, and a large part of them would return if there were work opportunities.

Mr. CHENOWETH. How many members does the United Mine Workers have in the anthracite region?

Mr. BRENNAN. You mean working miners, or idle?

Mr. CHENOWETH. Active members now.

Mr. BRENNAN. You would have to define "active members."

Mr. CHENOWETH. How would you classify an active member?

Mr. BRENNAN. If you mean a working member, between twenty-five and twenty-eight thousand. If you want to define it a little further, a lot of men maintain their membership after they leave here, or those unemployed retain membership, and you could add 20,000 to that.

Mr. CHENOWETH. What percentage of coal produced is produced by members of your organization?

Mr. BRENNAN. Ninety-some percent.

Mr. CHENOWETH. About 90 percent?

Mr. BRENNAN. A little more than 90 percent; it may be 95 percent.

Mr. CHENOWETH. Has United Mine Workers ever taken any active part in a research program of any kind? We had some testimony in Johnstown that at one time there was some interest in the bituminous research program. Is that true in the anthracite?

Mr. BRENNAN. The United Mine Workers at the moment, I do not know of them ever contributing any money to an active research program. We were always interested. But so many years back, prior to World War II, we just have not had any money because our people were not working. Those who were working were working slack time, and those unemployed were permanently unemployed.

Mr. CHENOWETH. In the United Mine Workers is there a separate division for anthracite and a separate division for bituminous?

Mr. BRENNAN. They are all members of the United Mine Workers of America, but there are separate contracts. The contract of the anthracite is different from the contract of the bituminous.

Mr. CHENOWETH. You do not regard one as separate from the other?

Mr. BRENNAN. No; all are members of the United Mine Workers of America. It is all one organization.

Mr. CHENOWETH. You say that the domestic sales were down about 5 percent?

Mr. BRENNAN. Domestic sales, from what information I have been able to gather, are down. When I say domestic sales, I mean sales for the eastern seaboard of our country and Canada were down approximately 5 percent, although the overall production is up approximately 7 percent.

Mr. CHENOWETH. Then you say your export business offers the best possibility for increasing your production?

Mr. BRENNAN. No; I was just stating a fact that the export production helped increase our tonnage in 1956 over 1955.

Mr. CHENOWETH. If it had not been for that, it would have been down considerably more?

Mr. BRENNAN. That is right, possibly 4 or 5 percent.

Mr. EDMONDSON. Mr. Metcalf, do you have any questions?

Mr. METCALF. No questions.

Mr. EDMONDSON. Mr. Saylor.

Mr. SAYLOR. Mr. Brennan, I would like to congratulate your organization on the statement you have made.

There is just one statement on page 2 that I am afraid might be a little misleading. You state: "In addition to this, $75 to $80 million is paid in freight rates to the railroads."

You do not mean that the United Mine Workers pays that, do you?

Mr. BRENNAN. Oh, no. I am not talking primarily for the United Mine Workers. I am interested in the industry.

Mr. SAYLOR. That is right.

Mr. BRENNAN. Because, I might say at this point, there never has been in my long years—and I am working steady for the United Mine Workers since 1922—there never has been better labor relations in the industry than exist today. So when I talk for the mine workers, I am trying in my own humble way to talk for the whole industry.

Mr. SAYLOR. I might say to you, Mr. Brennan, that within the memory of people in this room, you can recall the time when you could not come in and make that statement.

Mr. BRENNAN. Oh, yes, that is right.

Mr. SAYLOR. I am satisfied that that, in and of itself, is a good sign and indicates that there is a cooperation both on the part of the companies and the union.

Mr. BRENNAN. That is right.

Mr. SAYLOR. To find a solution for an industry that is in need of help.

Mr. BRENNAN. That is right.

Mr. SAYLOR. Following up Mr. Chenoweth's question. When we held our hearings in Johnstown, Mr. Ghizzoni, who holds the comparable position to you in district No. 2, was not able to be present, but he prepared a statement, and the vice president, Mr. Younkers, made it for him.

Mr. Younkers supplemented that statement with some information which was news to me, and I know news to other people. He said some years ago John L. Lewis had made a proposition that, if the operators would produce a half million dollars for research, he would equal the fund. Mr. Younkers stated that while he was not in a position to make any firm commitment on behalf of the union, because it had not been taken up, he felt that the position of the United Mine Workers had not changed, and if there was any indication by the operators that they would be interested in research, he felt they would be able to match, at least up to half a million dollars, the fund produced by the operators. Do you feel the same situation might exist as far as your organization is concerned in this area?

Mr. BRENNAN. Of course, I am not in a position to talk for President Lewis or the executive board of the International Union of the United Mine Workers. But, like the gentleman just asked me, was anthracite and bituminous separate, and I say, no, we are not a stepchild at all, we are a member of the United Mine Workers of America; so that anything that would be done for bituminous I am sure would be done for anthracite.

Mr. EDMONDSON. That is a good answer. [Laughter.]

Mr. Aspinall, do you have any questions?

Mr. ASPINALL. Mr. Chairman, I wish to compliment Mr. Brennan on a very fine statement in behalf of his organization, an organization with which I have been quite closely connected for almost 30 years of legislative experience. At one time one of the predecessors in national office of Mr. Lewis came from Colorado, a man by the name of

Frank Hayes, who served as Lieutenant Governor of Colorado and who rendered throughout the years a very important contribution to the industry and to those who consumed the product of the industry.

I think you have misused a word, and I do not want to be technical. On page 2 you have a word which does not mean to me at least what I think you mean. You say "because of unfair competition," and what you refer to really is inequitable competition, is it not?

Mr. BRENNAN. As far as foreign residual oil, I mean unfair competition.

Mr. ASPINALL. Do you think there is any motive on the part of those who are responsible at the present time for bringing in what some of us may consider to be too large amounts of these foreign products to embarrass the anthracite or coal industry? Do you think there is any motive back of that?

Mr. BRENNAN. I would not go that far, but I would certainly say they are not thinking of the welfare of anthracite and bituminous by importing foreign residual oils produced under unfair conditions.

Mr. ASPINALL. I would agree with you in that approach to it, but I do not wish to lay the responsibility on those who are responsible at the present time for having any other motive than that which is, perhaps, the best motive as far as our relations with foreign countries.

I consider it inequitable, I consider it to be contrary to the best interests of our home economy, and that is the reason I wanted to be sure what your meaning was.

Mr. BRENNAN. Of course, I believe in the old adage that charity begins at home, and I do think that before we try to build up relations with foreign countries we should try to take care of our own people. I do not believe that foreign residual oil being dumped, as it is here at almost any price, is either promoting good will abroad and certainly not promoting good will in distressed areas like we have here.

Mr. ASPINALL. You have your right to your own feelings in that matter, and I am not so sure you and I are so far apart. But there are those in more responsible positions than you and I occupy who feel that there must be such a program based on understanding and reciprocal relationships in the world.

Do you have any members of your organization working in strip mining activities in the anthracite fields?

Mr. BRENNAN. Yes, a large number.

Mr. ASPINALL. What percentage of the production of anthracite coal at the present time comes from stripping rather than from deep mine operations?

Mr. BRENNAN. I am not too familiar at the moment, and if I make a mistake I will yield to Frank Earnest back of me. I think possibly 30 percent or maybe a little more.

Mr. ASPINALL. On the way from the airport here we saw enormous culm piles, I believe you call them, or refuse from the mines. Slack piles we call them out West. Is there any tendency on the part of the Commonwealth of Pennsylvania at the present time to do away with that sort of loading up the landscape with unsightly material?

Mr. BRENNAN. I cannot answer for the Commonwealth of Pennsylvania, but there is a program for backfilling, as they call it, to fill in some of those strippings after coal is excavated.

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Mr. ASPINALL. Does the same program apply to putting the refuse from deep-mine production back into the chambers of the mine from which the coal was taken?

Mr. BRENNAN. No program like that of the State that I know of.

Mr. ASPINALL. Am I right when I say that the industry at the present time, at least under the conditions in which you are working, could not possibly accept the added expense of going to that program?

Mr. BRENNAN. I agree with that. They could not accept the added expense of refilling the mines. That is true.

Mr. ASPINALL. Let me ask you this question: What is the area of the market of the anthracite coal domestically?

Mr. BRENNAN. All of the eastern seaboard and Canada is our natural market.

Mr. ASPINALL. Does any of it go into the Middle West at the present time?

Mr. BRENNAN. Not too much. There is possibly some, but that unfortunately was ruled out in World War I west of Pittsburgh.

Mr. ASPINALL. The reason I asked that question is because I grew up as a boy in Ohio, and all I knew about anthracite coal after spending half a century in Colorado is the fact my grandfather used to burn anthracite coal from Pennsylvania in an old base burner. I asked my good friend and colleague from Pennsylvania, Mr. Flood, if you were now using coal in automatic stokers and furnaces. He assures me that you are.

Mr. BRENNAN. That is right, we are.

Mr. ASPINALL. Do you know, Mr. Earnest, about what percentage of production is used in the up-to-date automatic stoker facilities for heating buildings, heating space?

Mr. EARNEST. There are about 100,000 stokers installed, and roughly 10 tons per stoker, it would be about a million, somewhere between a million and 2 million tons. That is residential.

Mr. ASPINALL. I think that is all.

Mr. SAYLOR. Mr. Chairman, I just want to reaffirm the witness' position on residual oil, and I would like to give him another quotation from the Good Book which he can use, and that is: "He who does not take care of his own household is worse than an infidel."

Mr. BRENNAN. Agreed.

Mr. EDMONDSON. Mr. Brennan, you have made a very fine statement for the United Mine Workers. I think if a Welsh accent could be substituted for the slightly different brogue that I detect, I might be hearing a graduate of your organization who has migrated to the greener pastures of Oklahoma. You have a former Pennsylvanian named Dave Fowler out in Oklahoma who is a walking, talking chamber of commerce for Pennsylvania all over our State, and he fights the battle of the United Mine Workers just as vigorously and as ably out there as you have here.

I do not believe I would be faithful in my friendship for him if I did not say I feel a great share of the credit for the tremendous reduction in fatalities in mines in the coal industry is due to the United Mine Workers.

Mr. BRENNAN. That is right.

Mr. EDMONDSON. I think you certainly have conducted a crusade in that field that is something you can be proud of and share fully with the industry the credit for the achievements made in that direction.

I want to thank you for your fine statement.

Mr. ASPINALL. Will the gentleman yield?

Mr. EDMONDSON. Yes.

Mr. ASPINALL. That not only goes to the coal-mining industry but also goes to a great segment of the hard rock mining industry.

Mr. EDMONDSON. Are there any other questions of this witness?

If not, thank you, sir.

Call the next witness.

Mr. FLOOD. The next witness is Mr. John G. Connell, president of the Connell Coal Co., in Hazleton.

You know we have in this industry, as there is in the soft-coal industry, the old-line, large producing companies and a considerable production of the so-called independent coal companies, independent producers. Mr. Connell speaks for that element of our anthracite production. Mr. John G. Connell.

Mr. EDMONDSON. Mr. Connell, we are very pleased to have you with us today.

STATEMENT OF JOHN G. CONNELL, PRESIDENT, CONNELL COAL CO., HAZLETON, PA.

Mr. CONNELL. Thank you, Mr. Chairman.

Mr. Chairman, committee members, I am John G. Connell, president of the John G. Connell Coal Co. I am here today representing my company and also a number of other small coal operators and producers.

I am also a member of the coal research board of the Commonwealth of Pennsylvania.

I fully concur, as do my fellow small coal operators, with the presentation of our case by Mr. Kennedy and by Mr. Earnest, and there is not much more I can add, except this: I feel that our case has been well presented, and I feel that we will get the majority of votes of your committee.

Feeling that way, if I were the quarterback of this team and I knew that we were ahead, I would throw a forward pass and go home and see what Mrs. Connell had for dinner. But since I feel there is a small area that has not been fully explored, I think I will take the ball and hit the line.

The area that I refer to is the area closest to me at this time, with reference to the anthracite coal business. By that I refer to the activities of my present coal company, which is engaged in the reclaiming of coal from those slag piles or, as we refer to them, culm piles. The Congressman referred to them as slag piles. Our job is reclaiming the carbon in those piles.

The fine coal markets have been, in a sense, the only bright side of the anthracite industry in these late years. It is the only side of the industry which we can see fully at this time has an expanding market. But this is the area and my reasons for bringing this out.

Our reserves that we are working on, on a refuse basis, number about 4 million tons. We will be in business a couple of years, and then that 4 million tons will be gone. The markets have been developed for that coal, and in order to supply those markets in the forthcoming years the coal will of necessity have to be mined cheaper than it is

being mined at the present time so that the larger sizes of coal can be ground down to a size that will fit this market.

Now the point I wish to drive home at this time is this: The price that we are receiving for this coal, the moneys we are receiving for this coal at this time, we are able to make a profit on because we do not have to mine this coal; this coal is already mined. It is above ground. We have had to develop machinery for reclaiming it, and we need better machinery for reclaiming it. But the fact remains that we have an expanding market in the fine coal business, and the fact remains that we will have to develop better and cheaper methods of mining coal, of transporting coal, and preparing coal in order for us to retain that important and bright side of the market.

That is all I have to say.

Mr. FLOOD. If I might interrupt, I would suggest that the witness for the record tell the committee what he means by fine coal.

Mr. CONNELL. Well, when we say "fine coal," we could cut it down this way: As commercial production against domestic production. In other words, coal as it goes into the domestic market as against coal that goes into the commercial market.

Mr. FLOOD. I meant by sizes.

Mr. CONNELL. Nos. 4, 5, and 6 coals.

Mr. SAYLOR. Off the record.

(Discussion off the record.)

Mr. CONNELL. The coals prepared in the modern anthracite plant today, for example, is stove, nut, pea, buck, rice, barley, Nos. 4, 5, and 6. Rice, buck, barley, Nos. 4, 5, and 6, are commonly referred to as Nos. 1, 2, 3, 4, 5, and 6 buckwheat. The coals that I am primarily talking about are Nos. 4, 5, and 6 coal. In the No. 6 area there has been comparatively little research done.

Mr. EDMONDSON. They would be the very smallest usable coals in the form in which it is marketed, then?

Mr. CONNELL. Yes.

There is one other point I would like to bring home, which is this: This market, as anthracite is commonly referred to, is a luxury fuel, a fuel that is used only for home consumption primarily, and so forth. I might say that practically 100 percent of my business goes into the steel industry, so that we are an integral part of another very important industry in the United States.

I might say that the market of these coals, with reference to the steel industry, primarily since the advent of taconite, is increasing every year. It is an entirely new industry—taconite. It will probably be another 4 or 5 years before it reaches its peak.

Mr. METCALF. This fine coal you produce goes up and makes those little balls you send out in tacanite?

Mr. CONNELL. We refer to it as pelletizing in a plant where they sinter iron ore and its lays in layers and they boil it up with the other.

Mr. EDMONDSON. Mr. Aspinall.

Mr. ASPINALL. As I understand it, you get all of this production from which you produce finished product from piles of refuse from the mines which have been put out on the surface; is that right?

Mr. CONNELL. That is right.

Mr. ASPINALL. For my own edification, would you explain to me within 2 or 3 minutes just what the process is by which you take that

part of the culm and what you do with the residue you do not use?

Mr. CONNELL. Briefly, we use hydrocators, classifiers, and a froth flotation system. Some of it is used in your metal industries, particularly the froth flotation. It is all worked on specific gravity, and we float the finer particles and sink the heavier particles. The heavier particles are disposed of and the finer particles are coal.

Mr. ASPINALL. My final question: How much is recoverable and how much is waste?

Mr. CONNELL. To give you a round figure on what we commonly refer to in this area as silt, a good figure to use on silt piles over the years is 50 percent. We do run better and do run worse.

Mr. EDMONDSON. Mr. Saylor, do you have any questions?

Mr. SAYLOR. Yes. I would like to congratulate the witness on bringing us up to a phase that heretofore has not even been mentioned.

I have just one question. Are there in existence many of your bony piles, or culm piles, which were in existence before the washery production came into existence?

Mr. CONNELL. The accumulation of these silt piles—I would like to define the difference between a silt pile and a culm pile or slag pile, as Mr. Aspinall referred to it.

Most silt piles in anthracite were put out more by accident than anything else. The terrain just happened, for some reason or other, to retain them. Or if the precipitating colliery happened to be in a confined area, some means had to be made to store this fine material before it clogged up the natural drainage in the area.

In answer to your question, the remaining silt piles, speaking for my company, a small operator, we are working on the last job we expect to get.

I started my first silt job in 1930. We do not expect to get another one. They are not available. They are just gone. That is why I say—and I cannot be too strong when I point this out—this coal has to be mined cheaper, that we cannot mine it and sell it at the prices that we sell domestic coal at, and still retain that market. We have got to mine coals cheaper; we have got to have the equipment to mine it.

If there is no question on that, I would like to develop one more point in passing.

There has been some discussion relative to our tailing piles or slag piles and as to there being eyesores. Well, you know, the normal operation of this industry is going to continue to produce these piles. So what has to happen is that something has to be done with them. Something has to be found, but we need the money to find it with.

We have some ideas as to what could be done with those piles. We have some ideas as to what can be done with this waste.

I might just put this out for now: There is a certain amount of carbon in those piles that could be recovered. There is a tremendous cinder-block business on this eastern seaboard, and that is being supplied today from the natural banks of cinders that have been deposited through the anthracite region, but they are fast being depleted.

So when the cinder piles are gone, the next move is there has to be another aggregate, and these piles will lend themselves very favorably to light aggregate.

So then we will remove the eyesores, we will find a place for waste at a profit, and we will make that land available, as Mr. McGowan was saying, in Scranton for his industrial sites up there.

Mr. SAYLOR. I might tell you that in the soft-coal industry use has been found for it for concrete on a commercial basis.

Mr. CONNELL. Yes, I know it has been done. I know some of the plants. I know one in Ohio. But we do not have the money here to go into that end of it.

Mr. SAYLOR. That is all.

Mr. EDMONDSON. Mr. Metcalf.

Mr. METCALF. I have no questions.

Mr. EDMONDSON. Mr. Chenoweth.

Mr. CHENOWETH. How many men do you employ, Mr. Connell?

Mr. CONNELL. I would like to answer that in two ways: In 1950 we employed over 600 people. Today we employ less than 25.

Mr. CHENOWETH. How does your production compare?

Mr. CONNELL. In 1950 we produced a little less than half a million tons and now produce a little less than 200,000.

Mr. CHENOWETH. Where is your market? To whom do you sell?

Mr. CONNELL. Primarily the steel companies.

Mr. CHENOWETH. The steel companies?

Mr. CONNELL. Yes.

Mr. CHENOWETH. Do you get the same price for that coal they get on the domestic market?

Mr. CONNELL. No.

Mr. CHENOWETH. Roughly, what is the difference?

Mr. CONNELL. I would say overall on an average domestic coal and our coal, about 40 percent.

Mr. CHENOWETH. You would say a ton of anthracite coal delivered in Philadelphia would cost the consumer how much, roughly?

Mr. CONNELL. $18. Is that right?

Mr. EARNEST. Domestic size, about $22 or $23.

Mr. CONNELL. $22 or $23. You have got to put a profit for the dealer on that.

Mr. CHENOWETH. There is no way to bring that figure down? That is a pretty fixed figure, is it not?

Mr. CONNELL. There is a way to bring it down—mine it cheaper.

Mr. CHENOWETH. Is there any possibility of developing cheaper mining methods?

Mr. CONNELL. Cheaper mining and transportation and preparation.

Mr. CHENOWETH. You say you are one of a number of small operators?

Mr. CONNELL. Yes.

Mr. CHENOWETH. You call yourself small operators; is that right?

Mr. CONNELL. Yes.

Mr. CHENOWETH. Would that be about an average of 25 miners to a mine?

Mr. CONNELL. Larger than that. As I said, I am not engaged in mining at this time. We are engaged only in the reclaiming of the——

Mr. CHENOWETH. Have you ever been in mining?

Mr. CONNELL. Yes.

Mr. CHENOWETH. Will you go back to that when you exhaust this other?

Mr. CONNELL. Very definitely, and if we are going to stay in the coal business we need to go back within a few years.

Mr. CHENOWETH. That will increase the number of workers?

Mr. CONNELL. Very definitely, yes.

Mr. CHENOWETH. How many will be employed then?

Mr. CONNELL. I would be making a wild statement if I said at this time, if I were to guess.

Mr. CHENOWETH. Do you still have your properties?

Mr. CONNELL. No.

Mr. CHENOWETH. Where will you get properties; what is the procedure for doing that?

Mr. CONNELL. We lease.

Mr. CHENOWETH. You lease?

Mr. CONNELL. We independents lease mostly. We do not own them.

Mr. CHENOWETH. From whom do you lease?

Mr. CONNELL. From the major coal companies, from the line coal companies.

Mr. CHENOWETH. Is there any difficulty in obtaining a lease?

Mr. CONNELL. Well, if there is any difficulty——

Mr. CHENOWETH. Are leases available?

Mr. CONNELL. It is up to the individual.

Mr. CHENOWETH. If a man wanted to come in and start a coal business, could he get a lease?

Mr. CONNELL. Usually if you can mine cheaper than they can and make more money for them than they can, then you have got yourself a job.

Mr. CHENOWETH. In other words, you are making more money for them than they do themselves; is that it?

Mr. CONNELL. They have no capital investment either. I might add that we put over a million dollars back in the industry in the last couple of years.

Mr. CHENOWETH. What percentage of coal is produced under leases?

Mr. CONNELL. I would think it is a small percentage over the whole industry.

Mr. CHENOWETH. How many operators are there like yourself? How many in the anthracite area, roughly?

Mr. CONNELL. I guess 35 or 40 legitimate operators.

Mr. CHENOWETH. Are some smaller than you?

Mr. CONNELL. Yes.

Mr. CHENOWETH. Just five miners, something like that?

Mr. CONNELL. Yes.

Mr. CHENOWETH. Wagon or truck mines, as we call them?

Mr. CONNELL. Yes.

Mr. CHENOWETH. The same as in bituminous?

Mr. CONNELL. Yes, but not to the same extent you have in bituminous.

Mr. FLOOD. Will the gentleman yield?

Mr. CHENOWETH. Yes.

Mr. FLOOD. Do you mean by "legitimate producers," small legitimate producers?

Mr. CONNELL. I mean producers that live by the rules set up by the industry and the United Mine Workers.

Mr. FLOOD. As distinguished from?

Mr. CONNELL. From what is commonly referred to as "bootleg" miners.

Mr. CHENOWETH. What is involved in that? I never heard that expression.

Mr. CONNELL. In that our men are all union men of the United Mine Workers.

Mr. FLOOD. May I add further, you might indicate for the judge, that in the Schuykill area there is another problem that developed over a period of years.

Mr. CONNELL. In the Schuykill area there is a sizable industry, I think representing less than 10 percent, that is coal mined and prepared by what is called the Independent Truckers Association today.

Is that the right name, Mr. Brennan?

Mr. BRENNAN. Yes.

Mr. CONNELL. The Independent Truckers Association. Of course, they are not affiliated with the United Mine Workers, not affiliated with any of the controls that are set up by the industry. They do not correspond with any of the regulations of what we refer to as a legitimate producer.

Mr. CHENOWETH. They produce coal, do they?

Mr. CONNELL. Almost 10 percent.

Mr. CHENOWETH. They are interested primarily for transportation, then, to truck it out, this truckers association?

Mr. CONNELL. No. The name is confusing there. That just happens to be the name, the Independent Truckers. They are miners and producers.

Mr. CHENOWETH. Why the name? I do not quite catch the significance of the name, then.

Mr. CONNELL. I would not be able to answer that. I do not know where it came from.

Mr. FLOOD. Will the judge yield again?

Mr. CHENOWETH. Yes.

Mr. FLOOD. I think the witness might want to indicate there has developed there over a period of years a production group referred to as "bootleg mining," which also includes elements of trespass on property without legitimate lease, like the witness holds, and that sort of thing.

Mr. CONNELL. It was really an industry born of the depression where these thousands of miners were out of work and really had a lot of time on their hands. It started out by the miners going on the surface crops, digging enough coal for their homes. As it went on, they dug enough for their neighbor, then loaded it in a truck and took it to Philadelphia. It just skyrocketed.

Mr. CHENOWETH. Is that type of operation on the increase or decrease?

Mr. CONNELL. I would say it is on the decrease today, because of the easy coal not being available.

Mr. CHENOWETH. And the lack of market for the coal?

Mr. CONNELL. I would not say there was a lack of market for the coal. You see, since they do not live by the rules, they can produce coal a lot cheaper.

Mr. CHENOWETH. Undersell, then?

Mr. CONNELL. That is right.

Mr. CHENOWETH. And that creates the competitive part of it?

Mr. CONNELL. Yes.

Mr. CHENOWETH. That is all.

Mr. EDMONDSON. Mr. Udall.

Mr. UDALL. I just wanted to comment that it seems to me Mr. Connell has provided a very appropriate climax for these hearings in dramatizing by his own operations the need for research, which is what we are here to consider, of providing new methods and technological means of staying ahead of the game so he can meet what he says—he and the other people—is the only expanding market, the hopeful area in the general marketing problem.

I think that your presentation has been of great interest to us.

Mr. METCALF. Will the gentleman yield?

Mr. UDALL. Yes.

Mr. METCALF. Have you done anything along the line of pumping back in the waste material from these culm piles, into the mine?

Mr. CONNELL. No, we have not ,although the material will lend itself to that. But that has been done in this area.

Mr. METCALF. It has been done?

Mr. CONNELL. Yes, it has been done. We have not done it ourselves, but there has been more than one program in that respect.

Mr. METCALF. I understand that, too, is a problem you have here, the problem of subsidence.

Mr. CONNELL. Yes.

Mr. METCALF. Anaconda Copper, for instance, is using waste material, pumping it back into the mines under hydraulic pressure, and has some very successful operations. I was wondering if maybe some research along that line would be helpful.

Mr. CONNELL. I do not see the immediate end for that since there has been no difficulty in that respect in the industry. Where there has been backfilling done the normal pressure water has been enough, and the increase in the number of bore holes through the affected areas has worked out satisfactorily in the backfilling of those areas.

Mr. FLOOD. Off the record.

(Discussion off the record.)

Mr. EDMONDSON. Are there any further questions of this witness? Thank you very much for a very fine presentation.

Mr. CONNELL. Thank you.

Mr. EDMONDSON. Mr. Case, president of the Glen Alden Corp., wishes to make a further comment.

Mr. CASE. I would like to point out that we are backfilling and pumping material back in the mines under Kingston currently and almost continuously. We would very much appreciate any research work along that line to cut the cost of doing that. We do that to help stabilize the land under our part of Kingston.

Mr. FLOOD. Mr. Chairman, Kingston is a borough adjacent and contiguous to the Susquehanna River, which is adjacent and contiguous to the city of Wilkes-Barre.

Mr. EDMONDSON. I believe we have one further witness who asked for about 5 minutes' time, and then Mr. J. A. Corgan, who is here with a group from the Bureau of Mines, has indicated he might want to make a comment on one question. Will you do that now, Mr. Corgan?

STATEMENT OF J. A. CORGAN, CHIEF, ANTHRACITE DIVISION, BUREAU OF MINES, WASHINGTON, D. C.

Mr. CORGAN. I am J. A. Corgan, Chief of the Anthracite Division of the United States Bureau of Mines of the Department of the Interior in Washington.

It is getting a little late, Mr. Chairman, and it will only take me about a minute.

I only wanted to supplement what Mr. Earnest said, and what seems to concern Mr. Aspinall and Mr. Chenoweth, particularly, with respect to what the anthracite industry is actually putting into research.

While the industry may not be matching the Bureau of Mines, let us say, dollar for dollar in a monetary sense, they are putting a lot into it in this way:

We cannot conduct our research without the full cooperation of the industry and the United Mine Workers of America. For example, in our underground research in mining, they supply some equipment and machinery which they may have to buy. Then they pay the wages of the mineworkers who may be on a particular project.

You cannot pin down the actual sum involved, but I do think in some of our projects it is quite large. I just wanted to point that out. There have been cases where some of the companies have loaned certain types of machinery for our research, and other companies have conducted extensive research on certain projects and have made their files and records available to us.

There is no way to put a dollar value on that, but I dare say in some cases it might equal the amount of money we spend.

Mr. Earnest is aware of this because he arranged at one time for us to obtain a large quantity of coal from the different coal companies that we needed for certain test work in a large cupola operation.

I thought it only fair to point that out.

Mr. EDMONDSON. Are you familiar with the work in bituminous coal research by the Bureau of Mines?

Mr. CORGAN. To a certain extent, yes.

Mr. EDMONDSON. Could you say whether the contribution made along the lines of lending of equipment and men by the anthracite division is equal to the contribution of bituminous coal?

Mr. CORGAN. Definitely. Our contribution is in the neighborhood of $440,000. I think the anthracite industry contributes percentage-wise just as much as bituminous coal.

Mr. EDMONDSON. Are there any questions?

Mr. CHENOWETH. How long has the Bureau of Mines been engaged in a research program on anthracite coal?

Mr. CORGAN. Well, it started back in 1944. At that time we had no laboratory. The laboratory was built at Schuylkill Haven and completed around 1950.

Mr. CHENOWETH. What progress are you making?

Mr. CORGAN. I think we are making progress considering the funds that have been available to us. We have conducted, as you know, extensive tests with respect to possible use of anthracite in cupolas, and in blast furnaces. We have conducted considerable work on calcination, and we are in the field of gasification. But, Mr. Chenoweth, our work is coming to a point where we hope in the next few years to actually accomplish something for anthracite.

Mr. CHENOWETH. Is that immediately ahead in your present program, do you feel?

Mr. CORGAN. Yes.

Mr. FLOOD. Will the gentleman yield?

Mr. CHENOWETH. Yes.

Mr. FLOOD. You might indicate to Judge Chenoweth how long there has been set up in the Federal Bureau of Mines your Anthracite Division of which you are Chief.

Mr. CORGAN. About 15 months. I think it was in November of 1955 when, recognizing the problems of anthracite, they did establish a division to handle all activities with respect to anthracite except health and safety, which is in another division.

Mr. CHENOWETH. What is your total budget a year?

Mr. CORGAN. I did not get that.

Mr. CHENOWETH. What is the total amount you spend on this work a year?

Mr. CORGAN. Approximately $400,000.

Mr. CHENOWETH. That is all, Mr. Chairman.

Mr. CORGAN. That does not include mine drainage funds. That is another sum, but it is not research.

Mr. EDMONDSON. Mr. Corgan, in your publication Anthracite of which you are coauthor with J. Buch, you speak of a survey being made of market possibilities for special uses including frost control and crop drying.

Mr. CORGAN. That is right.

Mr. EDMONDSON. Could you tell us something about the findings of that special survey?

Mr. CORGAN. Yes. We made a survey on that, and it was determined that anthracite is an advantageous fuel for this purpose. However, it was more or less of a minor matter in that the tonnages involved were not great.

Mr. EDMONDSON. Is there any use at all of it in the fruit industry for that purpose?

Mr. CORGAN. No; I do not think so. We did make a survey of it to see whether it would amount to much, but to the best of my knowledge it did not.

Mr. EDMONDSON. Are there any further questions?

If not, thank you very much.

Call the next witness.

Mr. FLOOD. The next witness is Mr. Alfred W. Hesse, Jr., assistant general counsel of the Reading Co., headquarters in the Reading Terminal in Philadelphia.

As you know, Mr. Chairman, it is all very well to speak about the miner at the face and the companies who produce it, and so on, but unless you have somebody to transport it to the market you have a problem, there is a missing link in the chain. Other than trucking, we have the railroads which have been our strong right arm for generations, and I am pleased we have a witness speaking for the great coal-hauling railroads of our industry.

Mr. EDMONDSON. Mr. Hesse, we are glad to have you here.

STATEMENT OF ALFRED W. HESSE, JR., ASSISTANT GENERAL COUNSEL, READING RAILROAD CO., PHILADELPHIA, PA.

Mr. HESSE. Mr. Chairman, members of the committee, and Mr. Flood, I will just take a couple of minutes.

I want first to express the appreciation of all of us who are economically dependent on this region for you gentlemen coming here and listening to the various explanations of how we think we might be aided.

As you committee members know, the railroads of the United States have asked for special time to speak in Washington and present the problems of the railroads and their interest in the coal industry as a whole. But I did want just for a minute to call your attention to the fact that in the anthracite industry there are nine railroads. There will be 8 shortly, since 1 has been in reorganization and is now turned over to receivers to liquidate. But there are eight railroads at least which are vitally interested in the well being of the anthracite industry. Those railroads are transporters of all types of commodities and, therefore, are of economic value to the entire country, but they have a special interest in the anthracite industry.

Speaking for my own company, which is one of those railroads, last year our tonnage transported consisted approximately of 11 percent anthracite, and the other railroad companies will be close to that.

For example, our revenues in 1955 were approximately equal from bituminous and anthracite. The Pennsylvania Railroad Co., for example, is primarily a bituminous-carrying railroad but has a substantial interest in anthracite.

On the other hand, there are companies such as the Central Railroad Company of New Jersey, the Lehigh and New England Railroad Co., the Lehigh Valley Railroad Co., the Delaware & Lackawanna Railroad Co., which have substantial interest in the transportation of anthracite.

Accordingly, we are interested in anything that can be done to aid the anthracite producers in learning how more efficiently to produce and prepare their product and to obtain other uses for the materials so that this great industry, which has meant so much to the economy of the eastern seaboard for so many years, may continue, and also so that these railroad companies may continue to operate efficiently as a part of the transportation system of the country.

Thank you very much.

Mr. EDMONDSON. Thank you, Mr. Hesse.

I think our colleagues, Mr. Saylor, has to catch a plane in a few minutes, so I will break precedent again and recognize him for any questions or statement he might want to make.

Mr. SAYLOR. Mr. Chairman, I have no questions to ask of the witness.

I would like to take this time to personally thank members of the committee for coming up here and holding this hearing in Pennsylvania, and to congratulate Mr. Flood and the witnesses he has arranged to present to our committee. I think from the very nature of the testimony which we have heard here today that this committee could well spend at least another day in this area looking over, first, the facilities which we already have at the Anthracite Experiment Station and the work that they are doing there in research, and then have

an opportunity to look over an anthracite mine in full operation. I think it would be a day well spent, if we could arrange within the very near future to make that trip.

Mr. EDMONDSON. Mr. Metcalf.

Mr. METCALF. No questions.

Mr. EDMONDSON. Mr. Chenoweth.

Mr. CHENOWETH. No questions.

Mr. EDMONDSON. The gentleman from Colorado, Mr. Aspinall.

Mr. ASPINALL. Has the anthracite industry been troubled with a shortage of coal cars any time within the last 10 years?

Mr. HESSE. I understand there have been occasional shortages of coal cars in the area. That is right, sir.

Mr. ASPINALL. Have they had a sufficient number of coal cars for the last 4 or 5 years?

Mr. HESSE. I am afraid I am not prepared to answer that.

Mr. ASPINALL. When you come to Washington that is one question we would like to have answered. We would like to know whether or not the shortage of coal cars has had any influence appreciably upon the welfare of the industry.

Mr. FLOOD. If the gentleman will yield. The witness might also indicate, in which the gentleman from Colorado might be interested, the difficulty of obtaining sheet steel for construction of cars, if there is a shortage of cars.

Mr. EDMONDSON. Mr. Udall.

Mr. UDALL. No questions.

Mr. ASPINALL. Mr. Chairman, there have been two questions which I asked in this morning's session that remain unanswered. I wonder if Mr. Earnest or someone in the audience here today will get the answers to show what effect the depressed anthracite coal industry in counties affected has made upon the tax base of the county.

Mr. EARNEST. Mr. Case might be able to.

Mr. ASPINALL. If you do not have the answer now, later on.

Mr. CASE. I shall be glad to help furnish that. It is very complicated and a long story. I think we had better send it to you.

Mr. ASPINALL. All right.

The other question was relative to the housing situation. I do not believe the question that I asked in this morning's session has been answered. I do not know whether it can be. But I was told at noon by someone that you have enough houses but you do not have enough suitable houses, and that the reason you perhaps have enough houses to take care of the needs of the community is because so many people have left and that there remains old housing. So you are in need of any benefits that a housing program which is generally applicable to the Nation might give to any area. Is that right? Does anyone wish to make a comment on that?

Mr. EARNEST. I think the men best qualified to speak on that are out. I think that would be Mr. Sword or Mr. Crosby.

Mr. ASPINALL. If you can get the answer and send it in, it will be appreciated.

Mr. EARNEST. Right.

Mr. EDMONDSON. Mr. Flood, do you care to make any further statement?

Mr. FLOOD. Mr. Chairman, I have been requested by Dr. Edward Dessen, chairman of the board of the Hazleton Chamber of Commerce and president of the Greater Hazleton industrial fund, to request permission at this point in the record to insert a statement along the general lines of this hearing to do with the Greater Hazleton area.

Mr. EDMONDSON. Without objection, it is so ordered.

(Dr. Dessen's statement follows:)

GREATER HAZLETON COMMUNITY-AREA NEW DEVELOPMENT ORGANIZATION,
Hazleton, Pa., February 25, 1957.

HON. DANIEL J. FLOOD,
House Office Building, Washington, D. C.

DEAR DAN: I am extremely sorry that I was unable to testify personally at the congressional committee hearing on the anthracite industry in Wilkes-Barre on February 22, 1957. When I found that I was unable to attend, I could not find a subtsitute on short notice. However, as per your suggestion, we would like to be on record with some testimony for the Hazleton region.

I think some idea of the degree of decadence of coal as our basic male-employing industry may be obtained from a few figures. In the year of 1925, there were 13,399 employees in the anthracite industry in the Hazleton area; in 1935, there were 11,805; in 1945, there were 5,583; and in 1955, there were 2,321. As you can readily see, we had in 1955 only one-fifth of the employment that we had as recently as 20 years ago.

This has reflected itself in various business statistics that can be quoted in the Hazleton region. For example, in the years from 1950 to 1956, we had suffered a loss in the number of telephones served by the Hazleton exchange from 15,973 to 14,070; there has been a decrease in gross post office receipts from $465,143.54 to $436,867.76; there has been a decrease in the value of building permits from $1,132,522 to $773,321; and there has been a decrease in public school enrollment from 7,200 to 5,700. This, of course, has been during a period of great burgeoning prosperity in practically all other sections of the country.

We, of course, have suffered considerably economically because of these changes. The effects have been mitigated somewhat by several factors. One of these is the fact that there is a high amount of textile employment in this area, which means that a large number of women are working.

Although this is fortunate from a general standpoint, it is unfortunate from a sociological standpoint, since we have so many male unemployed, and so many female heads of families employed. Another factor that helped somewhat here is that we have a great many men working elsewhere, in such places as American Car & Foundry Co. in Berwick, Bethlehem Steel Co. in Bethlehem, Mack Truck Co. in Allentown, Johns-Manville Corp. in New Jersey, and many others. We actually have several thousand men who live in the Hazleton area who commute anywhere from 50 to 150 miles, either daily or on weekends, to reach their place of work. This, too, has quite unfortunate connotations in the way of local living and family life, and disruption of normal ways of life.

Locally, we have been striving mightily to correct this situation. In 1947, we raised $635,000 in cash from the public, $500,000 of which was given to the Electric Auto-Lite Co. as a cash gift to bring their plant to Hazelton. At the present time, they employ about 500 people, mostly male. Subsequent to that, we raised smaller sums at several times to bring several smaller male-employing industries to Hazelton. In 1956, in a single mighty effort, we raised approximately $700,000 in cash and in bonds to further interest new industry in our area. We are constructing industrial buildings in our new industrial park on a speculative basis, hoping to entice new industry into the buildings when they are completed.

Despite all of these efforts, I have the same feeling that I experienced in climbing sand dunes on the Sahara Desert during the war. We take 1 step upward in the sliding sand and find ourselves 2 or 3 steps further down the side of the dune. As an example of what I mean, in the years from 1950 to 1955, by dint of almost superhuman efforts, we were able to employ 726 males in new male-employing industry. In exactly the same period of time, we lost exactly 3,346 male employees in the anthracite industry. Although it seems like an impossible situation, we never relax our efforts for a moment.

Despite all of these statistics mentioned, there is one salient fact that should never be forgotten. With the increase in male employees in new surface stripping operations, we still have a little over 3,000 men employed in the greater Hazleton area in the anthracite industry. This reflects a slight increase over the 1955 employment. Although this figure is rather pitiful compared with the large numbers registered in previous years, we would like to emphasize the fact that the anthracite industry is still, by far, our greatest single male-employing industry. There is no other industry anywhere in our area nearly comparable in size, and the next factory listed in order of male employment would not even by one-seventh or one-eighth as large. For that reason, we consider it utterly essential that something be done to keep the small anthracite employment that still remains.

We appreciate this opportunity of going on record on this matter, and we greatly appreciate your own personal interest.

Best regards.

Respectfully yours,

EDGAR L. DESSEN, M. D.,
President.

Mr. FLOOD. Mr. Chairman, I would just like to say that the other men present all day at these hearings would have given testimony if the committee so desired.

Mr. EDMONDSON. Is there any other witness present here who specifically would like to testify against the proposition of a research program for the anthracite industry?

(No response.)

Mr. EDMONDSON. Is there any other witness who would like to testify on any point covering the work of this committee?

(No response.)

Mr. EDMONDSON. Then, if not——

Mr. ASPINALL. Mr. Chairman, I would suggest you have the record show no one answered in the affirmative to your question.

Mr. EDMONDSON. I think your statement will do the job perfectly on that, Mr. Aspinall. That is a good suggestion.

Mr. CONNELL. Mr. Chairman.

Mr. EDMONDSON. Yes.

Mr. CONNELL. Mr. Chairman, one little slight oversight. I would be remiss in my responsibilities and duties to our Congressman if I did not bring out this point: It is of great interest to my family at 5 o'clock on Sunday afternoon when we listen to our Congressman from Washington, D. C., Daniel Flood, at which time Dan gives a report on what he did last week and what he is going to do this week. I would just like to take this opportunity to tell Dan it has been very interesting and my children check up on it.

Mr. EDMONDSON. We are glad to have that additional piece of testimony for the record.

We have appreciated the hospitality of the people of Pennsylvania.

Mr. Earnest, did you care to make some further statement?

Mr. EARNEST. Having mentioned today noon having testified before many committees over a period of time, I wanted to thank you again on behalf of everyone, operators, mine workers, and railroads for taking the time to come up here. You have certainly shown your interest in our problem, and we have tried to be as fair as possible in what we have said. We just cannot say enough in thanks for your coming up here in our area. We will be glad to send to you the other information you would like to have.

Mr. EDMONDSON. On behalf of the committee I would like to thank the industry representatives, the representatives of the United Mine Workers, and the representatives of the different chambers of commerce who have been here, also the representatives of Government, both State and Federal.

Specific thanks certainly should be given to the mayor and chief of police for their cooperation in connection with this hearing. The Hotel Sterling management has also been very accommodating to us in connection with this hearing, and we want to acknowledge their very gracious assistance to the committee.

If there is no other business before the committee, the committee is adjourned.

(Whereupon, at 4:35 p. m., the subcommittee adjourned.)

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